CABINET.

POSITION OF SUGAR INDUSTRY IN THE COLONIES.

Note by Secretary of State for the Colonies covering Report of the West Indian Sugar Commission.

I desire to draw the immediate attention of my colleagues to the very grave situation of the British sugar-producing Colonies, i.e., the West Indies, British Guiana, Mauritius and Fiji.

I circulate with this the Report of the West Indian Sugar Commission, consisting of Lord Olivier and Mr. D. M. Semple. The Commission was appointed on the representations of the West Indian sugar producers that a serious crisis threatened their industry, and its report fully confirms these representations, and, in fact, shows that the situation has become and is becoming increasingly grave.

The situation as disclosed by the Report is that there exists a world-wide depression in sugar, due to over-production. In the last six years there have been accumulated surplus stocks of some 5,000,000 tons, as compared with an annual world consumption of less than 27,000,000 tons. In consequence, the price has, in the same period, fallen by over 60 per cent. (from 21/9 per cwt. in 1924 to 8/- at the present time). This over-production is due partly to technical improvements in production, but largely to the encouragement of production by bounties, subsidies and protective tariffs.

The West Indies are unable to produce sugar at the present world-price, and even with the existing preference of 3/9 per cwt. efficient producers there are suffering losses of up to 2/- per cwt., the average cost being 12/4 per cwt. f.o.b. The Commissioners (of whom Mr. Semple has had long experience in the manufacture of sugar in Hawaii and the Philippines, which set a high standard of efficiency) exhaustively examined the estate and factory methods in the West Indies and are satisfied that such improvements in technique as are possible cannot enable the West Indies to produce sugar profitably at present prices. The British Colonies generally, in fact, produce as cheaply as any countries in the world except Java and Cuba, which have special advantages of soil, &c., and of which the latter at least is carrying on at a loss.

If the present situation continues, there will be curtailment of planting of sugar in the West Indies and consequent unemployment and distress among the labourers, and decline in the public revenues. If the preference is removed and the West Indies have to sell their sugar at the world-price, the Commissioners believe the West Indian export sugar industry will have to be wound up as quickly as possible, i.e., crops now in the ground will be reaped, but no replanting will be undertaken. The preference given by Canada would be practically valueless if the United Kingdom preference were abolished, since the Canadian market is insufficient to absorb all the British Colonial sugar—so that competition would force prices practically down to the world price.

The consequences of such a complete abandonment of the industry would be disastrous. Certain of the islands, Barbados, Antigua and St. Kitts, are wholly dependent on sugar. No alternative crop (even if one could be developed rapidly enough) can wholly replace sugar and afford profitable employment to the whole populations, and they could not even grow food enough to afford a bare subsistence to
the labourers. The public revenues would practically disappear, and, as His Majesty’s Government could not leave the populations to starve, their relief and the maintenance of Government would become a charge on the United Kingdom Treasury.

The consequences in British Guiana would be hardly less disastrous, particularly as the Government is already in financial difficulties. In Jamaica, Trinidad and St. Lucia the sugar industry is not so all-important, but its loss would inflict a severe blow on the economy of these islands.

The West Indian Sugar Commission have accordingly recommended the following proposals to His Majesty’s Government:

1. His Majesty’s Government should make a resolute endeavour to eliminate, in concert with other Powers, the disturbing factors of high tariffs and subsidies (para. 44).

2. Meanwhile, a single purchasing agency should be set up to purchase all sugar for the United Kingdom, buying Imperial sugar at £15 per ton c.i.f., and other sugar at the market price (paras. 49 to 51).

3. By way of an immediate moratorium the British preference on Imperial sugar should be raised as quickly as possible to 4/8d. per cwt. (para. 53).

4. Pending the conclusion of an international agreement as in 1, or the establishment of a single purchasing agency as in 2, the duty on sugar should not be reduced below 4/8d., under which tariff Imperial sugar would be admitted free provided the total price obtained does not exceed £15 (para. 54).

A similar enquiry in respect of Mauritius was simultaneously undertaken by Sir Francis Watts, and his report, which has just been received, shows a very similar state of affairs in Mauritius. He considers the Mauritius producers efficient and estimates their costs at about 12 1/2d. per cwt. f.o.b. He cannot point to any measure by which the cost of production can be markedly reduced. He recommends a grant-in-aid to cover the difference between the price actually realised in Mauritius and 13/- per cwt.

Information was given to the West Indian Sugar Commission by a representative of the Fiji sugar producers indicating a very similar position there also, costs being about 12 3/4 per cwt.

The consequences of the abolition of the preference in Mauritius, which is practically wholly dependent on sugar production, and Fiji, which is largely dependent on it, may be expected to be very much the same as have been indicated for the West Indies.

I will circulate Sir F. Watts’ report on Mauritius, as soon as it has been printed, and also a further memorandum when I have given full consideration to the two reports. In the meanwhile, I beg that my colleagues will take into serious consideration the disastrous collapse with which these Colonies are threatened and the urgent necessity for prompt action by His Majesty’s Government if that collapse is to be averted.

February 10, 1930.
REPORT
of the
West Indian
Sugar Commission
Report on the Sugar Industry of The West Indies and British Guiana
(West Indian Sugar Commission, 1929–30).

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SUMMARY OF RECOMMENDATIONS

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Letter from the Colonial Office to the Right Honourable Lord Olivier, P.C., K.C.M.G.

DOWNING STREET,
12th September, 1929.

MY LORD,

I am directed by Lord Passfield to state that, as you are aware, representations have been made by the Governors, Legislative Councils, Agricultural Societies, and Chambers of Commerce of British Guiana and of those West Indian Colonies in which the cultivation and production of sugar is an important industry to the effect that the sugar industry is experiencing a severe crisis, that sugar can no longer be produced except at a loss, that certain estates are going out of cultivation, that there is grave risk that the owners of many other estates may be compelled to cease cultivation, that serious distress may result among large numbers of the population, and that the Governments of certain Colonies may experience great financial difficulty in maintaining essential services.

2. Copies of the telegrams and other representations received have been supplied to you, and you will have observed that many of the requests which have been received for the grant of assistance to the industry take the form of applications for an increased rate of preference. Upon this question Lord Passfield can only repeat the information contained in his telegram of the 18th July to the Governors of Barbados, British Guiana, Trinidad, and the Leeward Islands, to the effect that His Majesty's Government have the greatest sympathy with the difficulties now being experienced by producers in the Colonies, but that, as was stated by the Chancellor of the Exchequer in the House of Commons on the 9th July, they are, in view of their general policy, unable to adopt the solution suggested.

3. The Secretary of State has, however, fully recognised the seriousness of the situation and the need for early and thorough enquiry. He has accordingly appointed you, together with Mr. D. M. Semple, to be Commissioners to investigate it, with yourself as Chairman. The Secretary of State desires that you and your fellow Commissioner should enquire into:

(a) the causes of the present depression, the question how far they are temporary or permanent, and the general outlook for the industry;

(b) the measures, whether by means of research, improvements in cultivation, better organization of production, transport, manufacture, and marketing, or otherwise, which you consider are required in order to place the industry in the best possible position for the future, and the means by which such measures could be financed and carried into effect;
(c) any measures which may be desirable for the temporary assistance of the industry, for the provision of other employment, or for the relief of distress;

(d) the advisability and feasibility of replacing sugar by alternative crops in any particular areas, and the measures incidental thereto, including any schemes of migration of labourers or land settlements.

I am, etc.,

R. DARNLEY.
To the Secretary of State for the Colonies.

My Lord,

The gravity of the position now embarrassing the West Indian sugar industry, as ascertained by us, and possible loss of preference further threatening its virtual extinction, impel us to convey to you by telegraph this preliminary report of the effect of our general findings. Timely appreciation of true situation by His Majesty's Government appears to us essential with a view to the early alleviation of immediate conditions and mature consideration of effectual Imperial policy.

Present costs of reasonably efficient production, excluding provision for profit, depreciation, maintenance, or progressive improvement, exceed preferential market prices by amounts up to £2 per ton. Barbados, Antigua, St. Kitts, and British Guiana suffering diminution of trade and three latter serious diminution of revenue. St. Lucia expects increased deficit on year's finance. Jamaica Legislature has already adopted an urgency measure to maintain local industry. If artificial existing world-market conditions explained in the League of Nations Economic Committee Report persist, there will, after 1930 spring cropping, be considerable immediate contraction, abstention from planting, and aggravated embarrassment. If also British tariff preference should be withdrawn without substitution of other effectual protection against artificial conditions above referred to, apprehension of which possibility is already depressing forward market, there will in 1930 be no fresh cultivation or planting with a view to export of sugar and practically entire West Indian production of export sugar will, after 1931 crop already planted, rapidly disappear. Effects would be, in Jamaica, distress and difficulty of maintenance for labourers, especially severe in Trelawny and Westmoreland, and grave injury generally to the economy of the Island, as also in Trinidad, where there would be still wider-spread immediate impoverishment and serious embarrassment and expense to the Government on account of heavy liability for repatriation of Indians. Similarly, in British Guiana in far greater degree, and there, as well as in Barbados, Antigua, and St. Kitts, it would produce effects disastrous to labour, capital, and local government. Ancient British Colonies would suffer destructive shock with permanent damage to good relations with United Kingdom, which we should consider it impossible for any British Government to be a party to bringing about.
As was reported by the 1897 Commission, this situation is not due in any material degree to comparative ill-adaptation of West Indies for economical sugar production or to imperfect technique or defects of industry. Even with such imperfections as we shall report, West Indian sugar production ranks well in the scale of efficiency of the sugar production of the world. If the industry is preserved, its efficiency will probably be improved. Some help in this direction may be given by His Majesty's Government, but, unless further-reaching measures are taken, it will not be possible "to help West Indian producers in any way which will not merely enable them to tide over their present difficulties, but put them in a financial and manufacturing position to withstand world competition better in the future." (Chancellor of the Exchequer's statement, 9th July, 1929.) As in 1897, the world competition basically responsible for the situation is a competition of protective tariffs, bounties, and subsidies which production at a reasonable economic cost can be enabled to withstand only by action in the appropriate province. West Indian sugar prices are now depressed by operations in that province beyond the degree covered by British tariff protection by amounts up to £2 a ton, which are, in our opinion, greater than possible immediate economies in production. Without immediate help or encouragement (as has been realized in Jamaica) the industry will at once be further depressed and diminished, undeservedly and uneconomically for the world and the Empire, while, if preference is summarily withdrawn, it will undeservedly and uneconomically quickly perish.

We therefore recommend that

(1) His Majesty's Government should forthwith seriously endeavour, by whatever methods may best commend themselves, to promote the rationalization of world conditions and policy in regard to sugar production and trading, as His Majesty's Government effectively did in respect to the similar situation reported upon by the 1897 Commission.

In the interim,

(2) All sugar for the United Kingdom should be bought by a single agency and Imperial sugar paid for at a fixed minimum rate based on reasonable economic costs of production. This rate we should recommend to be at present about £15 per ton c.i.f. for 96° sugar (slightly over 1½d. per lb.). All other sugar should be purchased in the open market, taking full advantage of the cheapness caused by fiscal policies pending a reversion to sanity.

(3) By way of a moratorium, to enable the industry to carry on under present conditions, British preference on
Imperial sugars should as quickly as possible be raised to equal Canadian preference for West Indian sugar, viz., 4s. 8d. per cwt.

(4) Pending the remedying of the world situation which now cheapens sugar excessively for British consumers or the establishment of a single purchasing system with guaranteed minimum price, the British Customs duty on sugar should not be reduced below 4s. 8d. per cwt., under which tariff Imperial sugar should be admitted free.

We feel confident that our Report, which we hope to place in your hands by or soon after the end of January, will justify these recommendations which we should be prepared to support if necessary by further verbal explanations.

OLIVIER.

D. M. SEMPLE.
DEFINITION OF TERMS.

In this report, except where otherwise stated,

"sugar" means unrefined crystallized sugar, polarizing 96° of purity;

"ton" means 2,240 lb. avoirdupois;

"cost of production of sugar" means the cost of producing ready for delivery from the factory one ton of sugar, after deducting the value realizable from molasses, rum, and other by-products;

"cost of delivery" means cost of transferring sugar from the factory to the market;

"market price" means price per cwt. or per ton including cost, insurance, and freight as quoted in the official market reports.
REPORT OF THE WEST INDIAN SUGAR COMMISSION.

PART I.

Reply to questions referred to the Commission; and recommendations for early action.

My Lord,

1. By Your Lordship's letter of the 12th of September, 1929, you informed us that representations had been made by the Governors and Legislative Councils, and by the Agricultural Societies and Chambers of Commerce of British Guiana and of those West Indian Colonies in which the cultivation and production of sugar is an important industry, to the effect that

(1) the sugar industry is experiencing a severe crisis;
(2) sugar can no longer be produced except at a loss;
(3) certain estates are going out of cultivation;
(4) there is grave risk that the owners of many other estates may be compelled to cease cultivation;
(5) serious distress may result among large numbers of the population; and
(6) the Governments of certain Colonies may experience great financial difficulty in maintaining essential services;

and you expressed your desire that we should enquire into and report on

(a) the causes of the present depression, the question how far they are temporary or permanent, and the general outlook for the industry;
(b) the measures, whether by means of research, improvements in cultivation, better organization of production, transport, manufacture, and marketing, or otherwise, which we might consider are required in order to place the industry in the best possible position for the future, and the means by which such measures could be financed and carried into effect;
(c) any measures which may be desirable for the temporary assistance of the industry, for the provision of other employment, or for the relief of distress;
(d) the advisability and feasibility of replacing sugar by alternative crops in any particular areas, and the measures incidental thereto, including any schemes of migration of labourers or land settlements.

2. On the 31st of December, 1929, having by that time ascertained the main facts of the situation in all the West Indian Colonies, and being impressed with the expediency of His Majesty's Government being apprised of the facts and of our recommendations of policy as early as possible, we cabled to Your Lordship the brief Preliminary Report reproduced on page 5.
3. We have the honour now to report more fully to Your Lordship in detailed reply to the questions referred to us.

4. For the sake of brevity and precision, we will, at the outset, state in a summary manner the conclusions to which we have come, without extensively quoting the evidence upon which those conclusions are based. Appropriate selections from the written and oral evidence will be appended to our Report. We have canvassed most of this in public sittings and have assessed its effect and value to the best of our ability. What we shall reproduce without comment we regard as quite reliable.

5. With reference to the first representation made to you, that the sugar industry is experiencing a severe crisis, the situation as it was in July last was fully examined and reported on at that time by the Economic Committee of the League of Nations, whose conclusions we feel entitled to take as authoritative. These conclusions are supported by Dr. H. C. Prinzen Geerlings, Messrs. F. O. Licht and Dr. Gustav Mikusch, world experts who were requested by the Committee to submit memoranda on certain aspects of the situation.

6. It is estimated that in the twelve months ended 31st December, 1929, there were placed upon the markets of the world 28,200,000 tons of sugar, but that the consumption was a trifle under 27,000,000 tons. The over-production of last year followed similar excesses of production in previous years. Dr. Mikusch estimated that from 1923 to the beginning of 1929 there had accumulated an unmarketed surplus of about 3½ million tons of sugar held in various parts of the world. In New York we learned that at 1st December, 1929, stocks of sugar in Europe, the United States of America, and Cuba amounted to 5,218,000 tons. This is an increase of 1,181,000 tons over stocks at the same points a year earlier.

7. This position of affairs has produced an intense depression of price, the average open market price of sugar in London having fallen from 25s. 9d. per cwt. in 1923 and 21s. 9d. per cwt. in 1924 to 9s. 3d. per cwt. during the first five months of 1929, during which the representations from the Colonies were received by your Lordship. The price on the 31st December, 1929, was 8s. 3d. per cwt.

8. Our examination of the costs of production of sugar in the chief producing countries shows that, in consequence of the operation of tariffs, the consumers of sugar throughout the world pay very much more for sugar than it costs to make it, while the producers of sugar are now offered in the free markets of the world a price lower than the general cost of production anywhere, with the possible exception of Java, where exceptionally favourable natural and social conditions are combined with a super-abundant supply of labour paid at half the wage rate* paid

* Java, 10d. per day; Barbados, 1s. 8d. per day.
in Barbados. All but very few producers outside of Java for the free markets must consequently be experiencing losses.

9. Under normal circumstances, the balance of supply and demand might be expected to be redressed by the steady annual increase of world consumption, which is estimated at about 4½ per cent. per annum. The operation of this relief must, however, be interfered with by the enormous pressure for sale of the stocks already accumulated and by the restricted capacities of the free markets. It is also interfered with by the incentive to continue over-production offered by subsidies, by the temptation to Cuban producers to use their United States tariff preference to enable them to dump surplus sugar, and by the temptation to Java to take advantage of her low costs of production to drive other competitors out of the world's free markets.

10. There appears, accordingly, to be no reasonable ground for expecting any early restoration, under existing conditions, of the market prices of sugar to figures which will enable the present rate of production to be maintained without loss to unprotected or unsubsidized producers. At the same time, established production in the case of such a crop as sugar cannot be drastically reduced at short notice, nor, under the circumstances by which encouragement to over-production is given by fiscal systems in some countries, with the resulting provocation to dumping, is such reduction likely to take place in those countries.

11. It is, therefore, unquestionable that the sugar industry is experiencing a severe crisis and that this crisis must, under present conditions, be expected to persist for several years to come.

12. The second representation communicated from the West Indian Colonies, that sugar can no longer be produced in them except at a loss, is too general in its form to be summarily and completely endorsed. They enjoy a market protected to the amount of 3s. 8.8d. per cwt. We shall examine the position so far as we have been able to ascertain it in each of the several localities. The reports and accounts relating to the last crop (1929) show that, in certain cases, small profits were made, at any rate by the factories. In these cases, however, it is maintained that planters mostly supplied their canes at a loss. But even when sugar was sold at not less than the actual amount disbursed in its production, no profit was in many cases left for capital and no provision made for depreciation and normal renewals or for any improvements. Further, the question whether methods of production cannot be made more efficient is one of the most important of those referred to us, and will receive careful discussion. But, on the whole, it may be stated that, at present prices, equivalent to £10 10s. 10d.* per ton f.o.b., including the British tariff-preference, the greater part of the

* £8 5s. open market price; £3 15s. preference; £12 preferential price c.i.f. Deduct £1 10s. freight and charges.
West Indian production of sugar cannot be carried on except at a loss. From cost statements submitted to us, the amount of sugar produced at various costs in 1928, which is generally considered a normal year, as follows:

<table>
<thead>
<tr>
<th>Cost* in sack at factory.</th>
<th>Tons produced.</th>
<th>Percentage.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under £10 per ton</td>
<td>20,697</td>
<td>7.1</td>
</tr>
<tr>
<td>£10 to £11 , , ,</td>
<td>48,446</td>
<td>16.6</td>
</tr>
<tr>
<td>£11 to £12 , , ,</td>
<td>96,195</td>
<td>32.8</td>
</tr>
<tr>
<td>£12 to £13 , , ,</td>
<td>75,511</td>
<td>25.9</td>
</tr>
<tr>
<td>£13 to £14 , , ,</td>
<td>28,960</td>
<td>9.9</td>
</tr>
<tr>
<td>£14 to £15 , , ,</td>
<td>17,317</td>
<td>5.9</td>
</tr>
<tr>
<td>Over £15 , , ,</td>
<td>5,158</td>
<td>1.8</td>
</tr>
<tr>
<td></td>
<td>292,284</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Average cost—£11 17s. 6d. per ton.

It is to be noted that this table deals with only 292,284 tons out of a total output for the West Indian Colonies of 368,725 tons, as no cost statements were received covering the balance.

13. Such is the situation at present while West Indian sugar has a protective preference in the United Kingdom market of 3s. 8.8d. per cwt., equivalent under present market conditions to about 31 per cent. of the sale price of preferential sugar. The loss of this preference, added to the loss of about 1s. 10½d. per cwt. on the present average cost of production, would be followed by a precipitate diminution and probable rapid extinction of the industry, with the result of great distress among the dependent communities and very serious failure of public revenue now required to maintain Government services.

14. The third representation, that certain estates are going out of cultivation, cannot be said as yet to be extensively true. The most conspicuous case of this has occurred in Jamaica, where some large sugar properties have recently been purchased by the United Fruit Company because of the advantages which they present for the growing of bananas, for which trade recent developments in the Island have rendered it desirable for that Company to establish a greater control of supply. Both in Antigua and in St. Kitts it was represented to us that present prices paid for canes were no longer profitable, but in one case only did we learn that cultivation was actually being abandoned.

15. In British Guiana one small factory was on the eve of closing down owing to the combined effect of low price for sugar and shortage of labour at the wages the industry could pay, and we were informed that another sugar estate was likely to be soon abandoned.

* About 10s. per ton should be added to get f.o.b. cost.

Excluding depreciation, interest on capital and improvements, and after deducting the value of the by-products.
16. On the whole, we are disposed to think that the extent to which estates can be said to be actually going out of cultivation cannot be regarded as very disastrous as yet in any of the West Indian Colonies. Unquestionably, however, the present situation is already involving loss to proprietors and cane farmers, unemployment of labourers, and depression of trade in more than one of them.

17. The fourth representation, that there is grave risk that the owners of many estates may be compelled to cease cultivation, must, we regret to say, be accepted as true. How far the risk may materialize in the abandonment of sugar production after the coming crop, or the efficient handling of that crop be impaired through financial difficulties, would, in our opinion, depend upon whether any assistance or guarantee of support to the industry can be given within the next two months.

18. The fifth representation, that serious distress may result among large numbers of the population, will, in the event of such abandonment of sugar production, become true in Barbados, Antigua, St. Kitts, British Guiana, and Trinidad, and in some parts of Jamaica. Smaller areas in St. Lucia will also suffer. The degree to which the working population of each Colony will be affected may be tentatively summarized as follows:

<table>
<thead>
<tr>
<th>Colony</th>
<th>Approximate Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barbados</td>
<td>66</td>
</tr>
<tr>
<td>St. Kitts</td>
<td>100</td>
</tr>
<tr>
<td>Antigua</td>
<td>100</td>
</tr>
<tr>
<td>St. Lucia</td>
<td>25</td>
</tr>
<tr>
<td>British Guiana</td>
<td>50</td>
</tr>
<tr>
<td>Trinidad</td>
<td>33</td>
</tr>
<tr>
<td>Jamaica</td>
<td>10</td>
</tr>
</tbody>
</table>

19. In the same event, the sixth representation, that the Governments of certain Colonies may experience great financial difficulty in maintaining essential services, will become true in somewhat similarly proportional degrees in the Colonies specified. In several of them the revenue under such circumstances would practically disappear and applications would inevitably be made for assistance from the Imperial Exchequer from all except Trinidad and Jamaica.

20. On the several points into which Your Lordship desired that we should enquire, our findings are as follows.

(a) The primary cause of the present depression is the overproduction of sugar in excess of the effectual demand at-offered prices, due to increased production stimulated by various forms of assistance by Governments, creating a world surplus which must, for a considerable time to come, continue to depress the markets. So far as this general depression is concerned, it is
impossible at present to say how far it may be temporary or enduring. The presumable operation of economic determinants would apparently make it safe to suppose that it cannot be permanent, but the conditions of the present situation indicate that it must, or may, endure for several years to come. Remissions of the excessive rates of taxation now levied upon the consumption of sugar would presumably relieve the situation to an appreciable degree. One of our witnesses, admittedly an authority of the first order, was of opinion that the remission of duties and of consumption taxes would in certain countries lead to a definite increase in demand. The other principal cause of over-production creating depression is the great increase in the efficiency of cane production in Java, to which we have already alluded.

21.—(b) We have carefully considered the measures which should be taken to place the industry in the best possible position for the future.

22. As regards research, we think it most important that the studies which originated and have for many years been carried on in the West Indian Colonies into means for repressing disease and improving strains of cane, especially the latter, should be continuously and energetically pursued, and that increased expenditure should be applied to the propagation and distribution of such improved varieties of cane as may prove themselves suitable.

23. The cultivation of sugar-cane has attained a fairly high standard in most of the West Indian Colonies, and the planters are well to the fore in the methods of cultivation which they have adopted to suit the peculiarities of soil and climate in each locality. Granted a stable outlook for the industry for a period of years, many would improve their methods by the more extensive use of mechanical tillage.

24. In the better organization of production lies the greatest opportunity for improvement in a number of the Colonies. As will be indicated in detail, the centralization of production has been perfected in St. Kitts, and in the south of Trinidad, to a less degree in Antigua, British Guiana, and the north of Trinidad, whilst it can be said to have only fairly commenced in Barbados and Jamaica. The general trend, however, is towards better organization, and if prices can be stabilized at a point to encourage production under conditions such as exist in districts served by central factories, further development can be expected along these lines. Rapid improvements in manufacture have been made in the larger factories, but the average recovery of sugar is to-day in a very large number of cases far below good practice. To bring the equipment of some of these factories up to modern standards will entail expenditure of considerable sums of money. This money cannot be found under existing conditions.
25. For the improvement of the technique of the industry as a whole we advocate the formation of a Sugar Technologists' Association, as has been done in all progressive sugar-producing countries to-day, including Cuba, Java, Hawaii, Natal, and recently India, whereby comparative reports may be exchanged, technical papers read and discussed at an annual meeting, and all producers—agriculturists, transport workers, and factory operators—may more fully realize that collective work and cooperation will produce more rapid advance than the present individualistic methods. Such an Association will probably not be self-supporting and might reasonably receive some assistance from public funds. In other countries these Associations are assisted by donations from the factory-owners, who recognize the great advantage such an organization is to their business.

26. With regard to costs of transport and marketing, nothing of general importance can be stated. The marketing of sugar is on as sound and easily workable a footing as that of any other large staple product in the world. The question of transport is one which needs local consideration in certain cases, and financial assistance may be desirable for improving it. We shall make our recommendations in regard to finance in connection with this question at later stages in the course of our observations on local conditions.

27. It appears to us evident that, while improvements can be made in particular cases, the present depression of the British West Indian sugar industry is not due to any general lack of efficiency and cannot be remedied effectually by improvements in methods of production alone.

28.—(c) We shall consider here only the question of what assistance may be required for the industry as a whole.

29. Under the conditions of the free sugar market during the year 1929, it is clear, as we have already pointed out, that the sugar industry of the British West Indies and British Guiana could not continue to be carried on. The result of its abandonment would be exceedingly serious. If the protection now afforded by the existing tariff preference in the British market were suddenly withdrawn through the abolition of import duties on sugar, there could hardly fail to be an immediate disastrous collapse in Barbados, St. Kitts, Antigua, and British Guiana, which would entail results which we do not think it possible for any British Government to contemplate without taking measures to avert it. The same is true to a less degree in Trinidad and St. Lucia. The effects in Jamaica would be severe, but not equally crippling. The communities likely to be principally affected are themselves, indeed, small, but an economic and social collapse in any of these old-established British Colonies would be an event which, we take it, the Government would not be prepared to risk.
30. West Indian sugar, in common with other British sugar, enjoys a preference in Canada of 4s. 8d. per cwt. on 96° sugar, but at present producers receive a portion of that preference only very slightly in excess of the amount of the United Kingdom preference, and we were generally assured that West Indian producers could expect to receive little or none of the Canadian preference if the United Kingdom preference should be withdrawn. Before the granting of the United Kingdom preference, the West Indies had benefited by only a fraction of the then existing Canadian preference.

31. We are satisfied that, if the United Kingdom preference were abolished, West Indian sugar would lose the greater part of the benefit of the Canadian preference and would command prices little above the general world level (which, on the 31st December, 1929, was £8 5s. 0d. per ton).

32. Speaking in the House of Commons on the 9th of July, 1929, Mr. Amery enquired whether help could not be given to Colonies which are suffering from the depression in the price of sugar by a slight extension of the sugar preference. The Chancellor of the Exchequer replied:

"I hope that before we leave Office we shall have swept away all duties on articles of food" (specifying sugar) "which are subject to duty at the present time, and on which there are preferences, and, of course, when those duties are swept away, the preferences will naturally go with them. I do not give one inch to the Right Honourable Gentleman in his desire to help the Empire and promote friendly relations with our fellow-countrymen in the British Dominions across the sea . . . . I do not know whether the Right Honourable Gentleman would also like me to say a word about another observation which he made in passing with reference to the difficulties which some sugar producers in the Colonies are experiencing at the present time. We are giving that matter our very careful and, may I truthfully add, our sympathetic consideration, but the Right Honourable Gentleman must not expect that we shall deal with this question by way of preference. We shall not, but we are seeing if it is possible to help in any way which will not merely enable them to tide over their present difficulties, but will put them in a financial and manufacturing position in which they will be able to withstand world competition better in the future."

33. In Your Lordship's letter to us of the 12th September last, you referred to the request which had been received for the grant of assistance to the industry in the form of an increased rate of preference, to which Your Lordship had replied that "as was stated by the Chancellor of the Exchequer in the House of Commons on the 9th of July, His Majesty's Government are, in view of their general policy, unable to accept the solution suggested."

34. In pursuance of the idea which was evidently in the mind of the Chancellor of the Exchequer in making the statement quoted, you invited us to suggest the measures of research, improvement of cultivation and better organization of production, transport, manufacture, and marketing, or otherwise, which
we might consider to be required in order to place the industry in the best possible position for the future, and the means by which such measures could be financed and carried into effect.

35. In regard to the present situation of the West Indian sugar industry, we might, we think, appropriately repeat the statement made in the Report of the West India Royal Commission of 1897*.

36. We are reporting to the best of our ability upon all the points mentioned, and in the course of our observations we shall be able to point out, not only that the provision for research is already in many respects fairly efficient and is in a fair way to be made as completely so as possible, but that West Indian planters and Agricultural Departments have been pioneers in important branches of such research and that their lead has been followed elsewhere. Any additional provision for these purposes which we may recommend would not involve any considerable financial cost or ensure any rapid or material changes in the situation. In regard to improvements in cultivation, our reports will also indicate that the West Indian planters have been very far from failing to give such attention as their financial position enabled them to do to the study of improvements in cultivation and that, generally speaking, in all the principal sugar-producing Colonies the planters are now well aware, and most of them have long been well aware, of the kinds of improvements that might be effected and which it might be expected will be in large measure effected, provided only that a stable remunerative price for sugar can be established. Any general change in methods of cultivation must be gradual, and, in any case, would not enable the industry to continue at present open market prices.

37. We shall add suggestions in particular instances for the better organization of production, transport, manufacture, and marketing. None of these, we think it will be recognized, could possibly make the difference between the survival and the destruction of the West Indian sugar industry if the price obtainable should fall to the level at which it would now be and would appear likely to rest, should the preferential protection be entirely withdrawn and no other means of maintaining the industry substituted.

38. In fact, in such circumstances, it may be confidently stated that the West Indian sugar industry would very rapidly cease to exist, being reduced, as far as its exports were concerned, to the production of a negligible amount of fancy grades of sugar, syrups, and rum which still enjoy a limited special market.

* C. 8655 of 1897.
39. We conclude that no improvement of agricultural practice or methods of manufacture which can reasonably be promoted by His Majesty's Government "will put the West Indian sugar industry in a financial and manufacturing position in which it will be able to withstand, unprotected, present conditions of world competition." The position is so serious that even well-equipped modern factories in Cuba, which are three to five times as large as the largest equally well-equipped factory in the British West Indies, are in financial straits and are unable to pay cane-growers a fair price, although, through the recently-formed Cuban Government Sales Organization, Cuban producers are now able to obtain a portion of the preference granted by the United States on a substantial portion of their output, putting them also in a preferential position. When this is the case in Cuba, which produces 5,000,000 tons of sugar annually, our British West Indian sugar industry could not, in like conditions, survive.

40. We conceive ourselves, therefore, at liberty to assume that these facts were not entirely realized by the Chancellor of the Exchequer when he made his sympathetic pronouncement and that the mind of His Majesty's Government may be open to some practical suggestions as to how it may be possible to maintain the industry under actual present conditions of world competition.

41. In 1897, and, for the most part, consistently ever since then, the characteristic form of the plea of West Indian sugar producers on behalf of their industry was, and has been, not so much for tariff protection or preference as for the establishment of conditions which would eliminate subsidized competition and help to stabilize prices. They have long maintained that, granted fair conditions, the efficiency of their production and manufacture of sugar is already so high as to guarantee its maintenance and the remedying in due course of such deficiencies as we have to criticize in it. The first condition of remedying these deficiencies is, they consider, the establishment of credit which would enable them to obtain the required capital for introducing improvements that are necessary or practicable, and that for such improvements no very substantial need of direct assistance would be either needed or asked for by them from the Imperial Government.

42. The relief for which West Indian planters were asking in 1897 was effected by the Brussels Convention, abolishing sugar bounties. Since then the new factors which we have indicated have come into operation. The industry has been exposed to new vicissitudes, and a temporary palliative, that of tariff protection by preference, has been resorted to. This policy was deliberately adopted by the predecessors in Office of the present Government, who declared at the time their intention that it should be maintained for at least ten years.
Whatever might have been the fortunes of the West Indian sugar industry since then, had a different policy been adopted, a situation has been developed, for which the Imperial Government is concurrently responsible, whereby the Colonial sugar industry has, in fact, been enabled to survive on a reasonable basis of profits up to last year. Moreover, as was argued before us by witnesses, West Indian sugar producers have invested considerable sums in maintaining and extending their industry on the strength of this promise. Should this unstable form of assistance, already proving inadequate for its intended purpose, now be withdrawn, the situation would be worse than it has been within living memory. As regards the whole sugar-producing industry of the world, what it appears to be reasonable and necessary that all concerned should aim at is the stabilization of production and exchange on the basis of natural cost without the interference of tariff and bounty expedients for enriching particular interests.

43. The market for West Indian sugar for future delivery has already been for the present destroyed by uncertainty as to the policy which may be contemplated by His Majesty's Government, possibly in connection with the next Budget, with regard to the sugar duties. The utterances of the Chancellor of the Exchequer on the 9th of July and of December last have rendered it impossible to obtain any quotations. Should the duties on sugar be abolished in April next, without any prospect of an adequate safeguard in substitution, the general winding-up of the West Indian sugar industry would immediately be taken in hand, and any recommendations which could be made for improvements in the efficiency of its production, including research and the activities of the Imperial College of Tropical Agriculture in Trinidad, would be entirely thrown away. We think ourselves, therefore, entitled to assume from the assurance given of the sympathy with which His Majesty's Government regard West Indian interests that they are prepared to take some really effective action for their preservation.

44. It appears manifest that the British West Indian sugar industry cannot at this moment be saved from extinction if the tariff preference is withdrawn without some alternative form of assistance. No grant of direct financial assistance, however, can place the industry upon a stable footing and defend it in the future from further vicissitudes of the character which have repeatedly affected and crippled it in the past. Our first recommendation, therefore, is that a resolute effort should be made by His Majesty's Government, in concert with other powers concerned, to eliminate the disturbing factors of high tariffs and subsidies on the lines suggested by the League of Nations Economic Committee, to whose Report we have referred. Any negotiations for this purpose must necessarily involve protracted consideration and conference; and it cannot be expected, in view of the existing situation, that they could
produce any effectual result before the West Indian sugar industry, as at present carried on, had been practically destroyed. We suggest that, in the interim, an endeavour should be made by His Majesty’s Government at once to set on foot the rationalization of the sugar trade of our own Empire on the basis of a guarantee of reasonable local costs of production to those who can carry on the industry in the Colonies especially suited for it and at present dependent upon it.

45. The question of an effectual policy can obviously not be considered in relation to the situation in the West Indies only; it must have regard to the interests of Mauritius and Fiji, and, speaking generally, all British possessions not at present possessing responsible government.

46. In the course of our enquiries, we have received several suggestions as to the only conditions under which the industry can at all be maintained. These may be reduced to three:

(1) An increase of the present preference so long as duty is levied on the importation of sugar into the United Kingdom. The amount suggested has ranged from 1s. 0d. per cwt., which would equalise it with the present Canadian preference, to 2s. 0d. or 2s. 6d. per cwt., which would with present prices about repay the actual expenses of production.

(2) Alternatively, in the event of the sugar duties being abolished, the grant of a bonus per ton of sugar imported into the United Kingdom at the rate of half the present subsidy granted to the British sugar-beet industry, which would be 5s. 8d. per cwt., to be continued at the same rate after the British beet-sugar subsidy is reduced to that figure and so long as that subsidy is maintained. At the expiry of that period the whole situation in regard both to West Indian cane and British beet-sugar would necessarily have to be reviewed.

(3) That a fixed price for West Indian (and other Imperial Colonial sugars) should be guaranteed in the British market for which all sugars should be purchased through a single buying agency.

47. As regards the first proposal:—the protection of fostering of a domestic industry by means of the taxation of competing imports, or of a Colonial industry by means of differential taxation of non-Imperial imports, though it may not unnaturally appear to those producers who directly profit by it the most obviously simple and feasible mode of serving their interests, is, in fact, recognisably, on an analysis of its cost to the whole community of consumers and tax-payers, far from being the most economical fiscal method desirable for the purpose. This, we conceive, is a proposition in which His Majesty’s present advisers would concur; and they have already demurred to the request of
Colonial sugar producers for increased protection through the manipulation of the Customs tariff on sugar. We are, therefore, unable to recommend as a permanent remedy assistance by means of the Customs tariff.

48. As regards the second proposal, the payment of a bonus equal to half the present subsidy granted to British beet-sugar, and the placing of the Colonial sugar industry on the same basis as the newly created beet industry for the last two years of the subsidy period, would, we fear, create a situation which was not contemplated when granting a subsidy to establish a new industry in the United Kingdom.

49. The permanent policy which has accordingly commended itself to us is the stabilisation of the price of sugar produced in all non-self-governing Colonies by fixing it for the British market at a proper figure having regard to reasonable costs of production.

Such an arrangement could be maintained by two methods; either by paying the West Indian sellers out of the Exchequer the difference between the fixed price and the amount they could obtain by selling their sugar in the open market, a method which appears to us to be full of difficulty and open to many objections, or by establishing a single central authority to buy and distribute the whole of the sugar consumed in Great Britain. This authority would buy Imperial sugars at the allowed price, so long as the price at which it could obtain sugars elsewhere did not exceed that price. Should it exceed it, the Imperial sellers should receive the world market price. So long as it did not exceed it the sugar supply of the United Kingdom would be distributed to its consumers at a price sufficient to cover the pooled cost of the sugar bought in the open market and the Imperial sugar purchased at the fixed price. This arrangement would be on the lines which have frequently been advocated for dealing with wheat supplies. An added advantage of this arrangement would be that purchasing and selling prices could be fixed for 96° sugar and refined sugar in such a ratio as to guarantee the refining of the greater portion of sugar within the United Kingdom, ensuring the maintenance of work in the refineries, as is now done by the greater preferences on unrefined sugar.

50. The fixed price, we recommend, should be, under present conditions, about £15 per ton c.i.f. for 96° sugar. Allowing for some saving in expenses between the port of shipment and the United Kingdom due to the operation of the single buying system, this corresponds to a price of approximately £13 10s. 0d. per ton f.o.b. It will be seen from the table we have given above that West Indian sugar is produced at an average cost of £11 17s. 0d. per ton in sack at the factory. To this must be added the cost of placing the sugar on board ship, which must include transport, warehousing, and, in most cases, lightering, which vary considerably according to the location of
the factory, but which we have taken at 10s. 0d. per ton for a well-run factory with proper warehouse and port facilities. An allowance of £1 per ton should be added for depreciation or interest on capital, making the average f.o.b. cost £13 7s. 6d.

No allowance has been added for export tax. The price proposed, which should be subject to adjustment from time to time, appears to us to be low enough to make it impossible for any but reasonably efficient production to be carried on at a profit, while it should be high enough to offer some incentive to those proprietors who wish to make improvements in their factories or cultivation, and afford a reasonable return on capital invested in such improvements.

51. In the event of the fixing of a guaranteed price, it would be desirable to consult with the Dominion of Canada so as to permit of their making arrangements to ensure their obtaining a normal supply of Imperial sugar.

52. In case the principle of a single purchasing organization should not be deemed acceptable or the establishment of such an organization should require more than two or three months, we feel it necessary to make recommendations which would ensure the carrying on of the industry pending a solution of the major problem of the world situation.

53. The present rate of preference, especially as its effect is modified in anticipation that the preference will be entirely eliminated by the repeal of the sugar duties, is already not sufficient to maintain the West Indian sugar industry, and the losses which, upon this basis, must be incurred are likely to cause its early diminution. As a special interim provision to avert the threatened disasters we would recommend that, so long as the present import duties on sugar are maintained, the preferential allowance to Empire sugars should be augmented as has been requested to an amount at least equal to the preference granted by Canada (4s. 8d. per cwt.). This rate of preference is not sufficient under present market conditions to cover entirely the average bare cost of manufacture, but it is reasonable to expect that the average price throughout the year may improve following a pronouncement by the Imperial Government of a policy of maintaining the Colonial sugar industry. Also, the fact of sympathetic treatment being accorded or guaranteed to the industry will encourage those who are in a position to improve their equipment to proceed with these improvements and to make it possible for others to find the money for similar purposes, thereby reducing the cost of production. We base our recommendation on the present amount of Canadian preference, because any increase over that amount would have the effect of diverting the sugar now sold to Canada to the United Kingdom market, which, in view of the efforts of the Canadian Government to foster trade with the West Indies by preference and by Government-operated steamer service, would not be desirable. We have
pointed out that, although the nominal preference of West Indian sugar in Canada is to-day 4s. 8d., this amount is not realized, as the purchaser in Canada will not offer more than a small fraction over the United Kingdom preferential price. Increase in the United Kingdom preferential price would enable the West Indian producer to demand the full nominal amount of the Canadian preference.

54. If taxation on sugar is to be lightened, we suggest that the duty on Colonial sugar be abolished and a duty on other sugar of 4s. 8d. per cwt. be maintained until such time as our previous suggestion be adopted, or other means be arranged to maintain the industry.

55. In proposing a temporary increase of preference, we are alive to the possibility of a sudden increase in market prices enabling sugar producers to obtain prices far in excess of the cost of production, and we suggest that the amount of the preference be fixed subject to a limitation that the total price obtained for Colonial sugar should not exceed what we have proposed should be assessed as a reasonable price per ton.

56. If the entire extinction of the industry through the abolition of the preference is to be averted, it is, in our opinion, necessary that His Majesty's Government should make an early pronouncement which will restore confidence. We repeat the summary of these recommendations as contained in our Preliminary Report of 31st December, 1929.

(1) His Majesty's Government should forthwith seriously endeavour by whatever methods may best commend themselves to promote the rationalization of world conditions and policy in regard to sugar production and trading, as His Majesty's Government effectively did in respect to the similar situation reported upon by the 1897 Commission.

In the interim,

(2) All sugar for the United Kingdom should be bought by a single agency and Imperial sugar paid for at a fixed minimum rate based on reasonable economic costs of production. This rate we should recommend to be at present about £15 per ton c.i.f. for 96° sugar (slightly over 1½d. per lb.). All other sugar should be purchased in the open market, taking full advantage of the cheapness caused by fiscal policies pending a reversion to sanity.

(3) By way of a moratorium, to enable the industry to carry on under present conditions, British preference on Imperial sugars should as quickly as possible be raised to equal Canadian preference for West Indian sugar, viz., 4s. 8d. per cwt.

(4) Pending the remedying of the world situation which now cheapens sugar excessively for British consumers or the establishment of a single purchasing system with
guaranteed minimum price, the British Customs duty on sugar should not be reduced below 4s. 8d. per cwt., under which tariff Imperial sugar should be admitted free.

57. We make these suggestions as the simplest practical and effectual suggestions that it appears possible to us to put forward.

58. Unless assistance on some such standard can be guaranteed and the promise of it made at an early date, we see no probability of the extinction of the British West Indian sugar industry being averted.

59. If any arrangement ensuring a reasonable price to producers is established, sugar producers throughout the West Indies have expressed a confident expectation that those factories and estates which are at present below a reasonable level of efficiency would be able to obtain the necessary capital for improving their methods; and our observations, both of factories and of cultivation, have satisfied us that in many, probably in most, instances, this disposition and desire is entirely genuine and reliable.

60. On the other hand, so long as such an arrangement existed it would appear desirable that local Governments should be required to adjust their tariffs on sugar correspondingly so as normally to prevent the sale within the Colony of foreign sugar, refined or otherwise, at a price equal to or below the f.o.b. value of similar Empire sugar. Action to protect the home market has already been taken in Jamaica.

61. Colonial Governments should further be pressed to insist on a certain standard of cleanliness and sanitary conditions, both in the factory and in the housing of labourers. These conditions, since the Report of the 1897 Commission was furnished, have been, on the whole, improved, and, especially of recent years, there has been a still more marked tendency on the part of the more prosperous estates to improve them, but health conditions, and especially the supervision of them by the Governments, are still not generally satisfactory. If the cultivation and manufacture of sugar were suddenly to be killed by the withdrawal of the preference protection, and even if the present conditions under which sugar can only be produced at a loss on every ton should be continued, such progress as has been attained would be largely lost and the social conditions of the labouring population, in so far as they are dependent on the sugar industry, would infallibly be deteriorated.

62. There would inevitably be pressure to reduce wages, which are already hardly sufficient to maintain more than a bare subsistence, and the added effect of this would further worsen the already unsatisfactory standard of health.

63. We are confident that His Majesty's Government would not allow such a development while it lies in their power to prevent it and that they recognize the undesirability for social
reasons of taking advantage of the low price of any commodity when that price is only rendered possible by depressing the standard of living of the labourers employed in its production. The British community recognizes its general obligation to the less-developed peoples under its control, but it is under a very special obligation to the negro populations of the West Indies and British Guiana, as explained in the following quotation from the Report of the West Indian Royal Commission of 1897.

"The black population of these Colonies was originally placed in them by force as slaves; the race was kept up and increased under artificial conditions maintained by the authority of the British Government. What the people were at the time of emancipation, and their very presence in the Colonies at all, were owing to British action, or to the action of other European nations for the results of whose policy the United Kingdom assumed responsibility on taking possession of the territories in question; we could not, by the single act of freeing them, divest ourselves of responsibility for their future, which must necessarily be the outcome of the past and of the present. For generations the great mass of the population must remain dependent upon British influence for good government, and generally for the maintenance of the progress that they have made hitherto. We cannot abandon them, and if economic conditions become such that private enterprise and the profits of trade and cultivation cease to attract white men to the Colonies, or to keep them there, this may render it more difficult for the British Government to discharge its obligations, but will not in any case diminish the force of them. We have placed the labouring population where it is, and created for it the conditions, moral and material, under which it exists and we cannot divest ourselves of responsibility for its future."

64. As to the "provision for other employment, or for the relief of distress", we shall indicate in our detailed reports what possibilities there may be of establishing alternative industries. We regret that these are small, and that, especially in the Colonies likely to be most severely affected, we see no prospect of any action of the Government succeeding in providing profitable employment for the large number of labourers who would be thrown out of work by any serious diminution or the complete collapse of the sugar industry. The local Governments would, therefore, be faced with the responsibility of providing relief; but since, as we have indicated, a serious decline in revenue would occur concurrently, it would at any rate in Barbados, Antigua, St. Kitts, St. Lucia, and British Guiana be impossible for them to meet the ordinary expenditure for Government, without this additional burden, and they would be compelled to apply for assistance from His Majesty's Government. We are not in a position at present to make any estimate of the assistance which would be required, but it is clear that it would be likely to be considerable. We do not make any specific recommendations on this point, as we hope that, if our previous recommendations are carried out, the need for such assistance will not arise.

* Report, paragraph 513.
65.—(d). The question of replacing sugar by alternative crops in any particular area will be dealt with in our observations on the several Colonies. We regret that we see very little, if any, immediate possibility of such material reinforcements of the productive agriculture of the Islands in which the sugar industry is in the most critical state, or in British Guiana, as would relieve within two or three years the difficulties which would surely arise through the abandonment of sugar estates, inevitable should the present situation continue unmodified.

66. Nevertheless, where there are possibilities of developing alternative industries, for example, the rice industry in British Guiana, or, as a minor industry, the fruit and vegetable trade in St. Kitts and Antigua, we are strongly of opinion that every effort should continue to be made to foster such industries, particularly in those Colonies which are still dependent on sugar as their sole or predominant export crop.

67. We regret to have found it impossible to discover any material possibility of providing helpful facilities for the migration of labourers and their families from Colonies which may suffer from the failure of sugar estates to other British West Indian Colonies where they could become self-supporting, or even find employment at adequate wages, or any extensive schemes of land settlement within the Colonies threatened which might at an early date restore their prosperity in the event of such failure. The unoccupied lands of British Guiana do not, for the reasons we shall explain, offer any opening for such colonization and cannot be expected to do so for many years to come.

68. We are convinced, however, that, while schemes of land settlement cannot relieve the present emergency, the increased settlement of labourers on the land as peasant proprietors offers the best prospect of establishing a stable and prosperous economy in the West Indian Colonies. We regret that, with exceptions to which we refer more particularly elsewhere, so little has been done to carry out the strong recommendations of the 1897 Commission in this direction. We desire to reiterate those recommendations as an essential part of the general policy for the progressive solution of the present difficulties of the West Indian Colonies. In addition, we strongly recommend that every attention should be given to the development of co-operation among the smaller producers and to assisting them with credit facilities and in the preparation and marketing of their crops. Without such co-operation peasant production can hardly establish itself against the competition of larger units.

69. It is unnecessary for deciding upon the practical questions dealt with in this Report to assume as axiomatic either what is known as the Free Trade position (representing the view that all world commodities should be produced where they can be
produced most cheaply and interchanged between the respective populations of national areas), or the nationalist, Imperialist, or protectionist theory that it is expedient that national or Imperial areas should be internally self-supporting. If all the sugar the world now demands for consumption were produced and exchanged on principles of free trade the West Indian sugar industry would be in a satisfactory and even prosperous economic position. This fact will be recognised if consideration is given to the tables we exhibit, indicating that the world demand for sugar cannot be satisfied by the present producing areas at a lower marginal price than one exceeding considerably the cost of production in the British West Indies. If there now existed entirely unsubsidized and unprotected world production and free exchange of sugar, unchecked by Customs duties, the consumers of the world would be paying a lower average price for their sugar than they do now, but a higher price than West Indian producers can now obtain. And since, under theoretical conditions of free exchange, it is the marginal price obtainable at the meeting of supply and demand that determines the general market price of the product, the West Indian sugar producers would, at the present moment, be able to obtain a considerable rent or profit on account of their natural advantages, the capital they have invested and the attention and skill they have given to the development of their industry. Only lapse of time could determine whether the exploitation of new areas by the most efficient methods of mass production would reduce this marginal price below the level at which British West Indian Colonies can now profitably sell sugar.

70. Travelling for three months through these West Indian Colonies, British and French, visiting Cuba and discussing sugar affairs with a variety of instructed experts, some of them of world-wide knowledge, it has become increasingly difficult for us to imagine how anyone can suppose—if anyone does—that it would be of advantage for the people of Great Britain, for the British Empire, or for the world, that British consumers of sugar should be enabled to buy their sugar at an advantage of perhaps a farthing a pound through the acceptance of tribute from the tax-payers of other nations or the under-paid labour of Cuban colonos, Haytian primitives, or congested Javan peasants, at the cost of destroying old-established and valuable organic British communities successfully developing the solution of the problems of racially mixed populations, such as those we have been surveying in the West Indies. Very great damage would be done to the inhabitants and societies of those communities themselves, which, on ethical or Imperial grounds, it might well be judged imperative to avoid: but on material grounds alone the economic argument of the possible interest of British consumers would appear to us to be quite inadequate to commend such a proposal. If the loss to British export trade which the destruction of the West Indian market, so far as it depends upon sugar production,
would cause is taken into consideration, and if it is admitted that there would be an obligation upon the Imperial Government to provide at least the expenditure necessary for the relief of distress, and for carrying on the institutions of local government in those Colonies which would chiefly suffer, it cannot but be recognized that the pecuniary balance of profit to the British community, as taxpayers, consumers and producers, which would accrue through the reduction of the price of all the sugar they buy to the lowest competitive open market rates at which it could be obtained, would be either on the wrong side or at best very small.

71. Even if the account would show a profit, it is desirable that it should be clearly realized how that profit would be arising. Under present conditions, if the duty upon raw sugar (which more than doubles its cost) is left out of account, British consumers are buying their supplies of that sugar at a discount of something like three farthings a pound less than they would have to be paying for it in a free trade world. They are getting that discount through the effect of an over-production piled up at the expense of the taxpayers, consumers, and sugar producers of foreign nations, and at the expense of their own Colonial sugar producers, whose prices have been depressed by that forced competition; but they could pay fair prices to their own Colonial producers (who could supply about a third of the total) without sacrificing more than about a third of that advantage—say a farthing a pound—leaving them still advantaged to the extent of a halfpenny a pound. The situation under the former regime of the European sugar bounties in 1897 was closely analogous. It was recognized in that case that British sugar consumers were taking a mean advantage in accepting these foreign doles at the expense of the destruction of the British Colonial sugar industry, and Mr. Chamberlain pressed the negotiation of the Brussels Convention, abolishing the bounties. We have recommended analogous action, but even if this is impracticable and it is thought good business for our consumers to go on getting cheap sugar at other people's expense we have indicated a method whereby this gratuitous emolument can continue to be in great measure enjoyed, without taking part of it out of the pockets of our Colonial fellow subjects or destroying their principal industry.

72. It must also be remembered that, should the production of sugar in the British Colonies be wiped out, and, in the course of time, prices advance, the foreign producers who survive the present depression will demand and receive prices which might conceivably far more than compensate them for any present losses. In fact, were it not for this expectation it is difficult to understand why the financial interests now maintaining the Cuban crop should continue to finance it. In 1919-20, when government control of sugar in the United States of America, established during the war, ceased, the price soared to over ten
times its present level. During this period many of the British Colonial sugar producers had sold their crops to the British Government at what had been till then a normal price and others, who were in a position to take advantage of the advance in the market, paid over a large proportion of the profits in taxes.

73. In the present state of relations between the British Empire and the United States of America it may perhaps be right to assume that no weight need be given to apprehensions of inter-Imperial rivalry, but the considerations which were brought to our notice by the Chairman of the Imperial Association of Jamaica, based on out-spoken pronouncements made on behalf of American financiers, to the effect that the American sugar production policy, now dominating Porto Rico, Hawaii, the Philippines, Haiti, San Domingo, and Cuba, should aim at supplying the full requirements of the United States and Europe, presumably destroying the industry of the British West Indies and establishing a world sugar control, are perhaps not entirely without some possible relevance. There can be no question that such a condition of affairs as would result in the British West Indies from the unredressed abolition of the existing preference on sugar would both conduce to establishing the predominance of American capital in the world sugar market and also provoke a deplorable loosening of the political affections of West Indian communities from Great Britain and turn them in the direction of the United States of America.

74. In concluding this part of our Report, to the argument of which all that follows is merely subsidiary, we beg leave to point out to Your Lordship that it is of urgent importance, in view of the paralysis of the market for West Indian sugar and of preparation for further planting produced by the uncertainties of the present situation, that some public announcement of the intentions of His Majesty's Government in regard to sugar policy should be made at the very earliest possible date.
PART II.

A.—World Situation.

B.—General Situation in the British West Indies.

A.—WORLD SITUATION.

75. General causes of the present depression.—The world supply of sugar is derived from two distinct species of plants, the sugar-cane growing in tropical and sub-tropical zones, and the sugar-beet growing in temperate zones. Up to the outbreak of war in 1914 sugar was produced from cane and beet in similar proportions (1913-14 54.7 per cent. cane, 45.3 per cent. beet), but as by far the greatest amount of beet-sugar was produced in Europe, production of beet-sugar fell during the War years to almost \( \frac{1}{3} \) of what it was in 1913-14. The consequently enhanced price of sugar stimulated the production of cane-sugar so that in 1919-20, 79.9 per cent. of the world supply was cane-sugar and 20.1 per cent. beet-sugar.

76. The first contributing factor to the present depression was the comparatively rapid return of the beet-sugar output to a level similar to that of 1913-14; during the period 1919-20 to 1924-25 the yearly world production of beet-sugar increased from 3,326,000 metric tons to 8,316,000 metric tons. This increase has been stimulated and maintained by protective duties, bounties, rebates, and other special advantages in most sugar-beet-growing countries.

77. The second contributing factor is the tariff protection afforded a number of cane-growing countries enabling these countries to sell their product at a remunerative price in a protected market far above the free market price.

78. The normal increase in world consumption has been shown, over a number of years, to be 4\( \frac{1}{2} \) per cent., which, in a period of five years, represents an increase in the ratio of about 100 : 125. The ratio of increase in production of cane-sugar in protected markets for the five years 1919-24 compared with the five years 1924-29 has been—

<table>
<thead>
<tr>
<th>Country</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>100 : 179</td>
</tr>
</tbody>
</table>
| Porto Rico     | 100 : 148  
| Hawaii         | 100 : 144  |
| Philippines    | 100 : 199  |

Average of sugar admitted free to U.S.A. Markets 100 : 158.

79. Cuba—the world’s largest sugar-producing country—enjoys a preference in the U.S.A. market, but not equal to the full duty. Therefore, the great increases noted above displaced Cuban sugar on this market so that, although the increase in the Cuban crop, which was restricted by Cuban Government action in the three years 1926-28, was only in the ratio of 100 to 122 for the years mentioned, the exportable surplus, placed on the free markets of the world, increased in the ratio of 100 : 157.
80. The third contributing factor is the improvement within the cane-sugar industry, both in the yields of sugar per acre and in the processes of extracting sugar from the canes. This has led to increases in production in such countries as San Domingo, Haiti, and Java, where the ratio of crops for the five years 1919-24 to the five years 1924-29 is—

San Domingo and Haiti ... ... ... 100 : 184
Java ... ... ... ... ... ... 100 : 144

The cumulative effect of this over-production is estimated in the following table prepared by Dr. Mikusch:

<table>
<thead>
<tr>
<th></th>
<th>Statistical Consumption. (In metric tons and terms of raw sugar.)</th>
<th>Surplus Production.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1923-24</td>
<td>21,390</td>
<td>21,245</td>
</tr>
<tr>
<td>1924-25</td>
<td>24,883</td>
<td>23,058</td>
</tr>
<tr>
<td>1925-26</td>
<td>26,021</td>
<td>24,542</td>
</tr>
<tr>
<td>1926-27</td>
<td>24,701</td>
<td>24,553</td>
</tr>
<tr>
<td>1927-28</td>
<td>26,676</td>
<td>25,742</td>
</tr>
<tr>
<td>1923-24-1927-28</td>
<td>123,671</td>
<td>119,140</td>
</tr>
<tr>
<td>Consumption not included in statistics (at least 200,000 tons per year).</td>
<td>-</td>
<td>1,000</td>
</tr>
<tr>
<td></td>
<td>123,671</td>
<td>120,140</td>
</tr>
</tbody>
</table>

81. This table shows that at the beginning of 1929 the accumulated surplus production of sugar was estimated at 3½ million tons. The output of sugar for 1929 has been 28,200,000 tons and the consumption under 27 million tons. The estimated accumulated surplus amounted to more than 5 million tons in December, 1929.

82. How far are the causes of the present depression temporary or permanent. The markets available for sugar may be classified in four divisions in the manner indicated in the following extract from Dr. Mikusch’s memorandum:

“The entire trade operates within four concentric circles, in which tariff protection exercises its effects in a decreasing proportion from the centre outwards, while freedom of trade proportionately increases.

“In the innermost circle is the sugar, which is either consumed under the protection of a duty in the country of production or which is consumed in another country where some other form of duty is levied but where sugar is exempt from import duty.

“To the next circle belongs the sugar consumed in a country where it enjoys a preference over that of other origin.

“In the third circle is the sugar consumed in countries in which it receives no kind of preferential treatment with regard to tariffs or other duties but enjoys a favoured position—which may in some cases almost amount to a monopoly—on account of its geographical situation, freight conditions, marketing, Customs or any other cir-
cumstance, as, for example, the position enjoyed by Peruvian sugar in the Chilian market or by Java sugar in the Far Eastern markets. "Finally, sugar which is really sold in the open market belongs to the outermost circle."

83. The subjoined schedule gives an approximate statement of the prices of sugar ruling within these several classes of markets at 31st December, 1929:

<table>
<thead>
<tr>
<th></th>
<th>Buyer's Price</th>
<th>Tariff Protections</th>
<th>*Residual Price</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>s. d.</td>
<td>s. d.</td>
<td>s. d.</td>
</tr>
<tr>
<td>(1) Australia</td>
<td>37 4</td>
<td>Importation</td>
<td>8 3</td>
</tr>
<tr>
<td>South Africa</td>
<td>16 0</td>
<td>10 3</td>
<td>7 3</td>
</tr>
<tr>
<td>New York</td>
<td>17 6</td>
<td>9 0</td>
<td>8 0</td>
</tr>
<tr>
<td>Czechoslovakia</td>
<td>17 0</td>
<td>7 0</td>
<td>8 0</td>
</tr>
<tr>
<td>France</td>
<td>15 0</td>
<td>3 9</td>
<td>8 3</td>
</tr>
<tr>
<td>(2) Preferential sugar in London</td>
<td>12 0</td>
<td>c.i.f. U.K.</td>
<td>7 0</td>
</tr>
<tr>
<td>Cuban sugar in New York</td>
<td>9 6</td>
<td>c.i.f. N.Y.</td>
<td>8 6</td>
</tr>
<tr>
<td>(3) Java sugar in Far East</td>
<td>8 6</td>
<td>f.o.b. Java.</td>
<td>8 3</td>
</tr>
<tr>
<td>(4) London open market</td>
<td>8 3</td>
<td>c.i.f. U.K.</td>
<td>8 3</td>
</tr>
</tbody>
</table>

All figures are reduced to prices per cwt. 96° raw sugar parity.

* i.e., approximately the price in the free markets of the world.

84. The outlook for the industry. The cost at which factories can produce sugar varies greatly within any given area, and from year to year depending on the sugar market which generally governs the price of cane paid to the growers. The following table, adapted from one recently published by Lt.-Col. Ivan Davson, shows, as nearly as we can estimate from data available, the costs of production of sugar in various producing countries.

<table>
<thead>
<tr>
<th>Countries in order according to production costs</th>
<th>Per Cwt.</th>
<th>Cost of Production.*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>s. d.</td>
<td>Dollars</td>
</tr>
<tr>
<td>Cuba (a)</td>
<td>8 4 1/2</td>
<td>40-60</td>
</tr>
<tr>
<td>Java (b) Mainly White Sugar</td>
<td>9 3</td>
<td>44-40</td>
</tr>
<tr>
<td>Fiji (c)</td>
<td>12 3</td>
<td>58-80</td>
</tr>
<tr>
<td>British West Indies (d)</td>
<td>12 4 1/2</td>
<td>59-40</td>
</tr>
<tr>
<td>Hawaii (e)</td>
<td>13 6 1/2</td>
<td>65-06</td>
</tr>
<tr>
<td>South Africa (f)</td>
<td>15 8 1/2</td>
<td>75-42</td>
</tr>
<tr>
<td>Germany (g)</td>
<td>15 1 1/2</td>
<td>76-56</td>
</tr>
<tr>
<td>Formosa (h) High Grade</td>
<td>17 7</td>
<td>84-40</td>
</tr>
<tr>
<td>U.S. Beet (j)</td>
<td>18 0</td>
<td>89-60</td>
</tr>
<tr>
<td>Australia (k)</td>
<td>23 0</td>
<td>110-40</td>
</tr>
<tr>
<td>Argentine (l)</td>
<td>24 3</td>
<td>116-50</td>
</tr>
</tbody>
</table>

* F.o.b. including repairs, renewals, taxes, interest; excluding depreciation, and interest on capital.

(a) Based on $5-25 per bag at factory with 55 cents per bag charges to port as given for a large group of factories in 1929, rigid economies being practised at the expense of proper maintenance.

Footnotes continued on page 33.
85. Cuba and Java produced between them, in 1929, 8,177,913 tons; Fiji and the West Indies approximately 440,000 tons. Assuming that Haïti and Santo Domingo (360,000 tons), for which we have no costs, produced as cheaply, it would appear that the rest of the sugar produced for the world—viz., about 19,200,000 tons—two-thirds of the whole was produced at higher average costs running up to double the West Indian average.

86. Java and Cuba are the largest producers of cane-sugar for sale in the open market. In Java the soil is particularly adapted to the growth of sugar-cane; there is an abundant supply of very cheap labour available, and by propagation and introduction of new varieties of cane the yield of sugar per acre has been increased by about 30 per cent. during the past three years. Whereas in 1925 some nine principal varieties of cane were being cultivated, no one variety occupying more than 46 per cent. of the area under cane, by 1929 93 per cent. of the area had been planted to one particularly good variety which was just being introduced in 1925.

87. The production cost for Cuba is a minimum for certain well-equipped factories which have been recently built and can consequently reduce maintenance charges to a minimum. As in Cuba most of the cane is purchased from independent farmers, and the price paid is dependent on the market price of sugar, it was made clear to us that the farmers cannot maintain their

![Image](https://via.placeholder.com/150)

(b) The Annual Report for two estates gives costs in 1927 as equivalent to 2-00 cents per lb. The International Sugar Journal of November, 1928, quotes equivalent to 9s. to 9s. 2d. per cwt. and "somewhat lower for 1929." 4½d. average charge from ex store to f.o.b. is added.

(c) Average for years 1923-28 as given by Mr. F. C. T. Lord of the Colonial Sugar Refining Company and can be considered normal cost.

(d) Average cost of production at factory of all returns to commission for British West Indian sugar for year 1928, with 10s. per ton added for charges of placing sugar f.o.b. This is an average year and includes all normal maintenance charges.

(e) Actual cost of an average size Hawaiian factory in 1928 (producing over 20,000 tons of sugar).

(f) Figures as submitted in the report on the sugar industry by the Board of Trade and Industries, 1926.

(g) Published estimate for a medium factory dealing with from 25,000 to 50,000 tons of beet in 1924-25. Bridges and Dixey (Beet Sugar in France, etc., 1928) quote figures for growing and manufacture which support it. League of Nations (C. 303. M. 104-1929) records an estimate equivalent to 17s.

(h) Cost of production from the Japan Sugar Trade Review, 3rd November, 1928. Rosenfeld (International Sugar Journal, September, 1929) quotes higher figures, dependent on cost of canes.

(i) Evidence before the Committee on Ways and Means of the House of Representatives in Washington, 1929, varied from §3-80 to §6-07 per 100 lb., the latter figure including "interest on indebtedness and a modest return on capital."

(j) According to findings in Arbitrator’s report on conflict in Argentine sugar industry, 1927 (excluding amortization and interest on capital).
fields in a good condition and keep up the standard of their stock and implements when sugar is selling at present prices.

88. One large Cuban corporation, representing capital investment of about £22,000,000 and controlling the output of about 500,000 tons of sugar, has recently been reorganized on account of inability to meet debt charges.

89. Nevertheless, the capital sums involved in the Cuban sugar industry are such that it is unlikely that there will be any large reduction in the output of sugar from Cuba, as the losses incurred in abandoning factories would be very large. Also, as explained below, the recently-established single sales agency is already ensuring to the Cuban producer a proportion of the preference of .44 cents per pound (about 2s. 0½d. per cwt.) granted by the United States of America, giving him a price considerably higher than the free market price for a large proportion of his sugar and so enabling him to dump the balance at lower prices on the free markets of the world. Thus, no early relief can be expected from any reduction of production in Java and Cuba of by far the greater part of the sugar sold in the free markets.

90. By comparing the minimum cost of production for the other countries listed with the selling prices quoted above, it will be seen that the possible profit to the producer is such as will continue to stimulate production within the protected areas, and the continued increase in production will effectually prevent the rapid absorption of the accumulated surplus, so that the existing crisis is likely to continue for some years to come.

**CUBA.**

91. We returned to England from Jamaica by way of Cuba and New York, arriving at Santiago de Cuba on the 9th January and leaving Havana on the 14th January. Through the courtesy of the Royal Bank of Canada, the Punta Alegre Sugar Company, and the Hershey Corporation, we were able to visit a number of typical factories and see some of the cultivation, as well as having conversations with persons interested in the production of sugar and the financing of the sugar industry. The factories visited were Baguanos, Tacajo, and San German of the Punta Alegre Sugar Company, and Central Hershey of the Hershey Corporation.

92. The increase in the Cuban crop which took place principally in the post-war years, 1921 to 1925, was stimulated by the high price of sugar attracting the investment of large amounts of capital from the United States of America in the industry. This increase occurred concurrently with the return to normal production of beet-sugar in Europe, and helped to cause the slump in the sugar market which has continued with little revival since then. Large areas of virgin forest land in the provinces of Camaguey and Oriente in Cuba were felled and
planted with cane, the cane cuttings being planted among the tree stumps with little or no cultivation. The land was rich and fertile and large crops were produced. These cane fields have been left to ratoon continuously without replanting, manuring or tillage.

93. Realising that over-production was causing the slump in the sugar market, the Cuban Government, in 1926, restricted the output of sugar to 10 per cent. less than it had been in 1925 and prohibited the further planting of cane in virgin forest land. Further restriction followed in 1927 and again in 1928. Meanwhile, efforts were being made by the Cuban Government to induce other nations to restrict their output of sugar, more especially those countries which were placing their sugar on the free markets. These efforts met initially with some degree of success, but as the agreement of Java, which ranks second to Cuba in exportation of sugar, could not be obtained, the negotiations collapsed. The output of Java increased from 2,104,000 tons in 1926-27 to 3,203,000 tons in 1928-29. Consequently, all restriction in Cuba was dropped during 1929 and a crop of 5,230,000 tons, 1,125,000 tons more than in 1928, was harvested.

94. It is expected that in 1930 the Cuban crop will fall again to 4,750,000 tons as the large crop of 1929 was partly due to a high yield of sugar from canes carried over from 1928 on account of restriction.

95. The cane-fields we saw in Cuba were poor compared to the average in the British West Indian Islands, but this we gather is mainly due to lack of cultivation. With a rallying of the sugar market and more active cultivation of the areas already planted, Cuba will be in a position considerably to increase her output. There are further areas of forest land available for planting when the Government permits it.

96. The cost of manufacture of sugar, without charges for depreciation or interest, during the past year in Cuba was authoritatively stated to have been for some factories $5.25 per bag of 320 pounds, or 1.64 cents per pound (7/8d. per cwt. in sack at factory). This cost includes purchase of cane at a price based on the market value of sugar, the basis varying in different parts of the Island from 4\frac{1}{4} pounds to 6 pounds of sugar per 100 pounds of cane. The Cuban Government publishes at intervals the average f.o.b. price on the basis of which cane-growers are paid. Everywhere we were told that it was impossible for farmers to pay wages for the cultivation of cane at present prices, as the sum paid was little more than sufficient to pay the cost of cutting, loading, and transporting the cane. The labourers must support themselves during the months whilst harvesting is not in progress by cultivating their own foodstuffs, such as ground provisions, maize, etc., and this is now being extensively done. The labourers directly employed by the new estates in Oriente,
outside their factory yards, are principally Haitian immigrants, who receive 50 to 60 cents a day when at work, a house-plot, and ground for provision growing.

97. We learned that the Banks are unable to make progress in collecting loans made several years ago, but that it is considered better to maintain the production as the advances are repaid. Consequently, there will be no great curtailment of output even at present prices, as the financial interests involved are strong enough to obtain money to meet running expenses. There will probably, however, be a gradual diminution, as little planting will be done until the market revives.

98. Another and a new factor of great importance to sugar production in Cuba, and its effect on other markets, is the establishment by the Cuban Government of the "Single Seller" or Single Sales Agency, which is entrusted with the sale of all exported Cuban sugar. Through the medium of this Agency, the price of Cuban sugar sold to the United States market, where Cuba has a preference of 44 cents per 100 pounds, has already been raised 20 to 25 cents per 100 pounds over the price in other markets, putting the Cuban producer in a favoured position to "dump" surplus production not required in the United States, which is proclaimed both by that country and Cuba to be the natural market for Cuban sugar, not only on account of the proximity of the two countries, but also on account of trade agreements and financial interests common to both countries.

99. Centralization has been developed to the highest degree in Cuba and there are a number of factories each capable of grinding 10,000 tons of cane per day and over, corresponding to a production of over 100,000 tons of sugar per annum, i.e., more than any single British West Indian Colony and about equal to the total production of British Guiana. The country is flat and cane can be transported long distances at comparatively low costs. The interior factories are greatly handicapped by the high cost of transport of sugar to the seaboard.

100. Great interest in new cane varieties was evident at all the properties visited and comparatively large test plots of these varieties were being intensively cultivated in order to provide cuttings for extensive planting if the varieties proved successful. It was reported to us, however, that there was no immediate prospect of any of these varieties immediately replacing the standard Crystallina cane of Cuba, although one or two Barbados and Java hybrids were doing well. As already pointed out, planting has been greatly curtailed throughout the Island, but should the industry revive, Cuba is in a position to plant any high-yielding variety extensively without delay.

101. Vazcane Process.—Whilst in Havana we were accorded the privilege of seeing a new process in operation for the manufacture of insulating material and building material directly from
the cane fibre or bagasse. Until a much larger market for the product is developed there is no prospect of this process materially affecting the cost of sugar manufacture. There is every probability of factories being successfully established in a number of countries, but the sugar output of these factories will be relatively small.

102. The process was being operated smoothly and successfully on a small scale, and the samples produced were quite up to, if not better than, the standard of similar products. Assuming that the demand were sufficient to justify the capital investment, the process might perhaps be used for the production of fruit box shooks in Jamaica or Trinidad.

B.—GENERAL SITUATION IN THE BRITISH WEST INDIES.

103. In December, 1896, a Royal Commission, of which General Sir Henry Norman was Chairman and the Chairman of our present Commission was Secretary, was appointed to make an enquiry into the position and prospects of the West Indian sugar industry and into the results which might be expected from increasing depression of the industry of almost the same character as our present investigation. The terms of reference and the recital of the representations from the Colonies out of which the two references arose are closely similar. The same Colonies were visited and differences in their characteristic conditions were analysed as we analyse them in this Report. The work of the 1897 Commission was done with extreme thoroughness and its appendices included a valuable and exhaustive memorandum by Sir Daniel Morris on the then condition and possibilities of West Indian agriculture. It is impossible to survey the same ground without even at the present day often writing in very similar terms. Where progress has been made and where conditions have otherwise altered, it is interesting to compare our own observations with those of the 1897 Report.* For the most part, we can hardly review the present local aspects of the subjects surveyed without practically repeating the findings of Sir Henry Norman’s Report, and as what had to be said was therein very fully, clearly, and concisely stated, we might well in many instances be content to quote or refer to such statements.

104. The similarity of the circumstances is exemplified by the opening sentences of the summary of the conclusions of the Report of 1897.

"The sugar industry in the West Indies is in danger of great reduction which, in some Colonies, may be equivalent, or almost equivalent, to extinction." This is also the position to-day (January, 1930).

"The depression of the industry is due to the competition of other sugar-producing countries and in a special degree

* C. 8655 of 1897.
to the competition of beet sugar produced under a system of bounties."

"It is also affected by high protective tariffs, and by the competition of cane-sugar, the production of which is specially encouraged by the Governments concerned. The causes of the depression may be described as permanent inasmuch as they are largely due to the policy of foreign countries, and there is no indication that that policy is likely to be abandoned in the immediate future."

"It is not due in any considerable degree to extravagance in management, imperfection of the process of manufacture, or to inadequate supervision consequent on absentee ownership, and the removal of these causes wherever they exist would not enable it generally to be profitably carried on under present conditions of competition."

"The depression of the industry is causing sugar estates to be abandoned and will cause more estates to be abandoned, and such abandonment is causing and will cause distress among the labouring population ... and will seriously affect, for a considerable time, the general prosperity of the sugar-producing Colonies. ... If the production of sugar is discontinued or very largely reduced, there is no industry or industries that could completely replace it in such islands as Barbados, Antigua, and St. Kitts and be profitably carried on and supply employment for the labouring population ... ."

"We think it right to add that in all Colonies where sugar can be completely, or very largely, replaced by other industries, the Colonies in question will be in a much sounder position, both politically and economically, when they have ceased to depend wholly, or to a very great extent, upon the continued prosperity of a single industry."

"The best immediate remedy for the state of things shown to exist would be the abandonment of the bounty system of continental nations. This change would, in all probability, enable a large portion of the sugar-care cultivation to be carried on successfully and would certainly reduce the rate at which it will diminish."

105. The causes of the present depression are, as we have explained, somewhat more complex but its effects at the present moment appear to be in danger of becoming even more severe. The probability of the abatement of the causes appears, at this date, as remote as did in 1897 that of the abolition of the foreign sugar bounties.

106. We left England on the 5th October, 1929, and returned on the 27th January, 1930. We stayed for varying periods in Barbados, St. Kitts, Antigua, St. Lucia, Trinidad, British Guiana, and Jamaica, besides calling at St. Vincent and others of the West Indian Islands, and returned via Cuba
and New York. A copy of our itinerary is printed in appendix 1.*

107. Before leaving England we had prepared, and Your Lordship's Department had sent out to the Colonies we intended to visit, a memorandum (see appendix 1*) giving particulars of the assistance and information we wished to obtain from the local Governments and the planting and commercial communities or other competent witnesses interested in the sugar industry. This had been followed by a very full questionnaire covering the technique of sugar cultivation and factory work.

108. The Governments responded to these communications most helpfully and we were furnished with able and comprehensive memoranda from the local sugar-producing and commercial communities, from the qualified departmental officers of the Governments, and from spokesmen on behalf of the labouring class.

109. We found these statements generally complete, and their representations, which we examined by questions in public sittings and verified by independent observations and enquiry, reliable and convincing. We held in all 25 public sessions, at which 158 witnesses were examined. Other statements were received verbally and noted by the members of the Commission severally. The field and factory work we also examined by personal visits to a great number of estates and factories.

110. Our findings, on the whole, very closely coincide with and corroborate the representations made in advance to Your Lordship and the tenor of the documents furnished, the more important of which are included in the appendices of this Report.

111. The following table shows the importance of the sugar industry to the various Colonies. Exports of sugar formed, in 1928, 35 per cent. of the total exports of domestic produce from the Colonies we were concerned with; ignoring Trinidad and Jamaica, the proportion is 70 per cent. The exports from Trinidad include oil and pitch to the value of £2,895,854.

<table>
<thead>
<tr>
<th></th>
<th>Production of sugar</th>
<th>Exports of sugar, etc.</th>
<th>Total exports of domestic produce</th>
<th>Percentage (Sugar exports to total)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tons.</td>
<td>£</td>
<td>£</td>
<td></td>
</tr>
<tr>
<td>Barbados</td>
<td>63,139</td>
<td>1,167,693</td>
<td>1,226,769</td>
<td>95</td>
</tr>
<tr>
<td>St. Kitts</td>
<td>19,443</td>
<td>286,636</td>
<td>313,438</td>
<td>86</td>
</tr>
<tr>
<td>Antigua</td>
<td>19,668</td>
<td>250,595</td>
<td>259,100</td>
<td>97</td>
</tr>
<tr>
<td>St. Lucia</td>
<td>4,756</td>
<td>68,868</td>
<td>149,729</td>
<td>45</td>
</tr>
<tr>
<td>St. Vincent</td>
<td>1,530</td>
<td>14,190</td>
<td>155,884</td>
<td>9</td>
</tr>
<tr>
<td>British Guiana</td>
<td>116,113</td>
<td>1,805,000</td>
<td>3,032,000</td>
<td>60</td>
</tr>
<tr>
<td>Trinidad</td>
<td>81,551</td>
<td>1,230,547</td>
<td>6,686,455</td>
<td>20</td>
</tr>
<tr>
<td>Jamaica</td>
<td>62,525</td>
<td>789,000</td>
<td>4,143,151</td>
<td>19</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>368,725</strong></td>
<td><strong>£5,594,529</strong></td>
<td><strong>£15,966,526</strong></td>
<td><strong>35</strong></td>
</tr>
</tbody>
</table>

* To be published later.
112. The proportions of sugar exports to total exports afford an approximate indication of the comparative importance of the industry to the various Colonies, but in some the export trade is of less importance in the economy of the Island than in others. In Jamaica, for example, the exports amount to only £4 per head, as compared with £17 in Trinidad and £7 in Barbados. Jamaica is certainly not less prosperous than either of the other two Colonies, but has a more valuable internal trade and is more effectually self-supporting. The extent of the dependence of the various Colonies on imported food supplies, and therefore upon exports with which to pay for them, is indicated in the following table.

<table>
<thead>
<tr>
<th>Colony</th>
<th>Imports of Food, Drink, and Tobacco</th>
<th>Population</th>
<th>Per head</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barbados</td>
<td>£842,882</td>
<td>169,000</td>
<td>£5.0</td>
</tr>
<tr>
<td>St. Kitts-Nevis</td>
<td>£130,561*</td>
<td>35,000†</td>
<td>3.7</td>
</tr>
<tr>
<td>Antigua</td>
<td>£101,182*</td>
<td>30,000</td>
<td>3.4</td>
</tr>
<tr>
<td>St. Lucia</td>
<td>£80,669</td>
<td>57,000</td>
<td>1.4</td>
</tr>
<tr>
<td>British Guiana</td>
<td>£920,410</td>
<td>207,000</td>
<td>3.0</td>
</tr>
<tr>
<td>Trinidad</td>
<td>£2,127,921</td>
<td>397,000</td>
<td>5.4*</td>
</tr>
<tr>
<td>Jamaica</td>
<td>£2,050,423</td>
<td>975,000</td>
<td>2.1</td>
</tr>
</tbody>
</table>

* 1927 figures. † Includes St. Kitts, Nevis and Anguilla.

113. A truer view of the comparative importance of the sugar industry is probably to be obtained by reading the above table together with the following, showing for each Colony the proportion of the total population employed in it. (The numbers dependent on the industry, including dependents of labourers, may be taken as about three times the number employed.) These figures are only approximate.

<table>
<thead>
<tr>
<th>Colony</th>
<th>Directly employed in sugar industry</th>
<th>Population</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barbados</td>
<td>34,157</td>
<td>168,000</td>
<td>20</td>
</tr>
<tr>
<td>St. Kitts</td>
<td>6,000</td>
<td>18,000</td>
<td>33</td>
</tr>
<tr>
<td>Antigua</td>
<td>9,000</td>
<td>30,000</td>
<td>31</td>
</tr>
<tr>
<td>St. Lucia</td>
<td>6,900</td>
<td>57,000</td>
<td>12</td>
</tr>
<tr>
<td>British Guiana</td>
<td>50,000</td>
<td>307,000</td>
<td>16</td>
</tr>
<tr>
<td>Trinidad</td>
<td>40,000</td>
<td>397,000</td>
<td>10</td>
</tr>
<tr>
<td>Jamaica</td>
<td>30,000</td>
<td>975,000</td>
<td>3</td>
</tr>
</tbody>
</table>

114. With regard to the outlook of the industry in the British West Indies, we would emphasise the present absolute dependence of the industry as a whole on the preferential treatment now granted to sugar from the Colonies. Sugar exported
from the various West Indian Colonies during the past three years is as follows:

<table>
<thead>
<tr>
<th></th>
<th>Exports of Sugar (in tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1926.</td>
</tr>
<tr>
<td>Antigua</td>
<td></td>
</tr>
<tr>
<td>Barbados</td>
<td></td>
</tr>
<tr>
<td>British Guiana</td>
<td></td>
</tr>
<tr>
<td>Jamaica</td>
<td></td>
</tr>
<tr>
<td>Montserrat</td>
<td></td>
</tr>
<tr>
<td>St. Kitts-Nevis</td>
<td></td>
</tr>
<tr>
<td>St. Lucia</td>
<td></td>
</tr>
<tr>
<td>St. Vincent</td>
<td></td>
</tr>
<tr>
<td>Trinidad</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>276,730</td>
</tr>
</tbody>
</table>

115. The average for the past three years is 304,121 tons. The free market price in London at the 31st December, 1929, was 8s. 3d. per cwt. and the Colonial preference is 3s. 8.8d., so that the total value of the average annual output of sugar from the West Indian Colonies at the preferential price of 11s. 11.8d. at that date was £3,644,382.

116. If this sugar had to be disposed of in competition on the free markets of the world at 8s. 3d. per cwt., the return would be £2,509,098. As very few West Indian producers can manufacture sugar at 12s. per cwt. c.i.f. (in table above we indicate an average cost of production of 12s. 4½d. f.o.b.), the loss of the United Kingdom preferential market would mean a further loss to producers of about £1,135,000—31 per cent. of their receipts—and would be followed by a rapid diminution and practical extinction of the West Indian sugar industry under existing world market conditions. The immediate result would be very serious distress among the population of some of the Islands, and serious reduction of revenue necessary to maintain Government services.

117. Owing to the considerable differences of climatic and soil conditions throughout the West Indies and British Guiana, it is impossible to deal fully in a general way with the British West Indian sugar industry. There are, however, many features common to all the Colonies, and others on which a general comparison is instructive. These will be dealt with in this section: a closer analysis of the conditions in each Colony is made in separate sections for each Colony.

118. Answers to the Commission’s questionnaire.—We received great assistance from the very ready response to our request for detailed information on the technique and costs of producing sugar contained in the questionnaire which was sent
two weeks in advance of the sailing of the Commission from England. Owing, however, to varying methods of accounting and analysis, and in many cases to the lack of any technical control, some difficulties were experienced in completing the enquiries. In other cases there has been difficulty in making comparisons owing to the variety of products manufactured, such as syrups in Barbados, yellow crystals in Trinidad and British Guiana, and rum in Jamaica. We consider, however, that the following statement, showing the percentage of sugar covered by detailed answers to our *questionnaire* in relation to the whole output of each Colony affords a fair gauge of the comparative degree to which proper methods for technical control of manufacture have been adopted. It is unfortunately no gauge of the actual efficiency of this control since, in many cases, the returns were incomplete, as in that of St. Lucia, where in regard to no factory was complete information available.

<table>
<thead>
<tr>
<th>Colony</th>
<th>Production covered by answers to questionnaire.</th>
<th>Total production.</th>
<th>Percentage.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barbados</td>
<td>Tons. 29,829</td>
<td>Tons. 63,139</td>
<td>47</td>
</tr>
<tr>
<td>St. Lucia</td>
<td>Tons. 4,756</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>Antigua</td>
<td>Tons. 19,668</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>St. Kitts</td>
<td>Tons. 19,443</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>British Guiana</td>
<td>Tons. 107,559</td>
<td>Tons. 116,113</td>
<td>93</td>
</tr>
<tr>
<td>Trinidad</td>
<td>Tons. 80,162</td>
<td>Tons. 81,551</td>
<td>98</td>
</tr>
<tr>
<td>Jamaica</td>
<td>Tons. 30,867</td>
<td>Tons. 62,525</td>
<td>49</td>
</tr>
</tbody>
</table>

119. Cost of cultivation and harvesting cane.—Following is a table showing typical costs of cane in the various Colonies, with details added for typical cases in Hawaii and the Philippine Islands:
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(a)</td>
<td>(b)</td>
<td>(c)</td>
<td>(d)</td>
<td>(e)</td>
<td>(f)</td>
<td>(g)</td>
</tr>
<tr>
<td>1. Cultivation (including harvesting)</td>
<td>1.62  1.97  2.84</td>
<td>2.64  2.07</td>
<td>1.86  1.95</td>
<td>2.60  2.52</td>
<td>2.36  2.76</td>
<td>2.62  1.61</td>
<td>1.61</td>
</tr>
<tr>
<td>2. Manures (artificial)</td>
<td>-78  -89  -87</td>
<td>-11  -45  -45</td>
<td>-07  -19  -14</td>
<td>-60  -45  -13</td>
<td>-14  -14  -65</td>
<td>-95</td>
<td></td>
</tr>
<tr>
<td>5. Buildings</td>
<td>-13  -16  -14</td>
<td>-30  -23  -10</td>
<td>-52  -64* -06</td>
<td>-11  -12  -06</td>
<td>-12  -12  -06</td>
<td>-12</td>
<td></td>
</tr>
<tr>
<td>6. Insurance and Taxes</td>
<td>-23  -32  -39</td>
<td>-11  -08  -06</td>
<td>-11  -12  -05</td>
<td>-12  -12  -05</td>
<td>-12  -12  -05</td>
<td>-12</td>
<td></td>
</tr>
<tr>
<td>8. Total</td>
<td>3.99  4.89  6.19</td>
<td>4.23  4.45  4.84</td>
<td>4.85  3.88  4.14</td>
<td>3.45  4.68  3.54</td>
<td>3.06  3.06  2.81</td>
<td>2.81</td>
<td></td>
</tr>
<tr>
<td>9. Deduct catchcrops, rents, etc.</td>
<td>-25  -39  1.08</td>
<td>-57  -17  -06</td>
<td>-17  -18  -06</td>
<td>-17  -18  -06</td>
<td>-17  -18  -06</td>
<td>-17</td>
<td></td>
</tr>
<tr>
<td>10. Net cost per ton</td>
<td>3.74  4.50  5.11</td>
<td>3.66  4.45  4.67</td>
<td>4.72  3.82  4.14</td>
<td>3.45  4.68  3.48</td>
<td>3.06  3.06  2.81</td>
<td>2.81</td>
<td></td>
</tr>
<tr>
<td>Yield per acre</td>
<td>33.6  27.1  30.8</td>
<td>29.0  24.2  19.6</td>
<td>18.5  20.7  15.4</td>
<td>26.2  19.6  21.2</td>
<td>22.82 61.97</td>
<td>11.82</td>
<td></td>
</tr>
<tr>
<td>Cost per ton in £ s. d. at 1 cent.</td>
<td>15/7  18/9  21/3</td>
<td>15/3  18/6  19/5</td>
<td>19/5  19/5  15/11</td>
<td>17/3  14/4  19/6</td>
<td>14/6  12/9  11/8</td>
<td>12/9</td>
<td></td>
</tr>
</tbody>
</table>

(a) Average of returns covering Red Soil estates of 1,942 acres.
(b) Average of returns covering Black Soil estates of 2,134 acres.
(c) Average of returns covering Sandy Soil estates of 310 acres.
(d) Average for 1928 of 3 typical estates of 795 acres in St. Kitts, for which full figures are available.
(e) Average for 1928 of 2 typical estates in St. Kitts, for which only partial credits for value of other crops have been deducted from costs of cultivation, etc.
(f) Average for 1928 of group of estates comprising about 1,100 acres reaped yearly. Note high cost of building maintenance on account of hurricane damage in 1928.
(g) Average for 5 years 1924–28 for same estates. Note estates under 6 and 7 were in poor condition in 1924 and the expenditure during years quoted has been high due to building up of estates.
(h) Average for 1928 of 697 acres. *Note cost of livestock included with buildings.
(i) Average costs submitted by Committee—not derived from actual totals. Area of about 2,500 acres.
(j) True average of 17 returns by estates cultivating over 40,000 acres. Note in British Guiana the cost of livestock is charged to haulage of cane.
(k) True averages compiled from 7 returns by estates cultivating over 20,000 acres.
(l) True average of 6,566 acres.
(m) Figures are representative of 2,221 acres (6 farms) during 1924–25 crop.
(n) Figures are representative of 2,400 acres of unirrigated cane during 1928 crop.
These figures are true averages of a number of detailed returns which were submitted by estates in a position to detail their costs and may be taken as fairly representative of conditions in 1928. Since then some economies have been effected. In this table the average yield per acre of the area referred to is also given. In the case of Hawaii it should be noted that the high yield per acre (61.97 tons of cane) gives a very low cost per ton of cane in spite of the high cost per acre for labour and fertilizers. The area referred to is unirrigated, and, therefore, to some degree comparable to West Indian conditions. The rainfall is, however, 100 to 120 inches per annum, much exceeding that normal in the West Indies.

120. (a) Labour (cultivating and harvesting).—The cost of labour per ton of cane throughout the British West Indies is comparatively high. This is not due to high rates of wages, but rather to the extravagant use of low-paid labour. Over large areas the cultivation work is done almost entirely by hand, and large numbers of women and children are employed for weeding and cultivating. The work is, on the whole, very thoroughly done, and the cost per acre is probably not much, if at all, above the cost of mechanical tillage. But, where mechanical tillage has been adopted, it has generally been found that the deeper and better preparation of the soil results in higher yields, not only during the first or plant crop, but in the subsequent ratoon crops, so that the cost per ton of cane is reduced. The general rate of wages is from 1s. 6d. to 2s. per day for men and 10d. to 1s. 3d. per day for women. Work is all done by "task" and we were told that it is quite possible for a man to perform two "tasks" per day, earning double the sums mentioned above, but this is not generally done. The wages are very low, but it appeared in the course of evidence given us that it is recognised by labourers that higher wages can hardly be paid with sugar at its present price or without the reduction of the numbers employed.

121. Any immediate change from manual to mechanical cultivation would cause unemployment, especially in Barbados, where a working-class witness strongly deprecated it on this account, but we believe that, if the industry is to survive and be prosperous, at least part of the solution is to be found in obtaining higher yields per acre by mechanical cultivation. Every possible encouragement and assistance should be given by the local Governments to promote the extension of mechanical cultivation by the abolition of duties on ploughs and tractors where such exist, by rebate or refund of duty on fuel oils, and by facilitating the manufacture of denatured alcohol from the waste molasses for use in agricultural machinery. The problem of harvesting is dealt with in detail for each Colony.

122. (b) Manures.—As is evident from the comparative returns, the use of artificial fertilizers has not been adopted to
any great extent. We would urge the laying out of test-fields in representative districts under the superintendance of the local Departments of Agriculture or Sugar Associations, and in conjunction with the planters. The results of these tests should be properly evaluated, showing the weights of the fertilizer constituents applied per acre, the value per pound (lb.) of each constituent, and the value applied per acre. This should be set off against the added value of cane produced, as shown against the check plots, for various values of sugar. These results should be widely disseminated among the estates and farmers in the plainest terms possible.

123. Cuba is producing cheap cane by simply allowing it to grow year after year on immense expanses of fertile land, much of it recently in forests, with little cultivation and low yields per acre. Java and Hawaii produce cheap cane by intensive cultivation of small areas, giving high yields per acre. The cane-fields of the British West Indian Colonies have been under cultivation for so long and the area is so limited that Cuban methods would be disastrous. It is, therefore, necessary to adopt intensive methods of cultivation.

124 (c) Livestock.—In this item would appear to be the greatest possibility for economy, and we make recommendations for each Colony. The reason for the high expense under this heading is given in many parts as the necessity for obtaining large supplies of pen manure which, in the British West Indies, is considered essential for cane cultivation. The cost of pen manuring is very high, if to the cost of livestock is added the labour required for cutting grass, and "heading" out the manure; and we advocate the testing out of large areas without the use of pen manure, as is now done in Hawaii, Porto Rico, and parts of Jamaica. It cannot be denied that pen manuring is an excellent agricultural practice, but whether the return obtained pays for the labour expended and the upkeep of stock, when sugar is selling at low prices, is very doubtful on the basis of the cost of pen manure submitted to us.

125 (d) Staff, etc.—The amounts expended on staff, buildings, insurance and taxes and incidentals, are proportionately high in the West Indian Colonies, but, as pointed out to us, they are probably, of necessity, being reduced. The general condition of the housing accommodation of labourers is poor, as we explain in greater detail below.

126. Factories.—We visited 57 factories in the British West Indies and British Guiana. Of these, a number are well-equipped and well-managed central factories which are quite up to modern standards, and recommendations are made in detail regarding the others. There is one important point which may be best dealt with generally. Sugar is a foodstuff, and
as such passes directly, in many cases, into consumption without any intermediate process either as sugar or syrup. It should be regarded as essential, therefore, that the greatest possible degree of cleanliness of factory and equipment should be maintained in its manufacture. The process of manufacture has now been so developed that it is unnecessary for anyone to handle the sugar during manufacture, yet cases were observed in which workers were required, not only to handle the sugar, but to stand and walk about on it, and the sugar was being piled on floors which had previously been walked on. The better-run factories of the British West Indies leave no room for complaint, but in too many of them manufacturing conditions are not up to the standard required for foodstuffs. And when the prevalence of disease among the labourers is taken into consideration the need for scrupulous cleanliness becomes very apparent.

127. Payment for canes.—Where canes are purchased by the factory the basis generally is that the current market value of 5 pounds of sugar f.o.b. with, in some cases, deductions on account of freights on cane to factory and value of containers, is paid for every 100 pounds of cane. In Antigua and St. Kitts payment is made at the rate of 5½ pounds of sugar, with no deductions, and at the end of the season a further payment is made of half the profits of the factory if profit has been made. There is no deduction in the event of a loss. In Jamaica 6½ per cent. was paid to estates and large farmers and 6 per cent. to small farmers by one factory producing sugar for home consumption.

128. Cane varieties.—The breeding of new varieties of canes has been carried on for many years in Barbados and Demerara, and these two Colonies have in the past supplied new seedlings which are to-day being grown practically all over the world. Of recent years this work has not been maintained as previously and we recommend that it be continued. As the propagation of a new hybrid, such as B.H.10 (12), is of benefit, not only to Barbados, but to all the other Colonies, since cuttings from a high quality seedling are quickly sought after and obtained by others, it would be equitable to distribute the cost of upkeep of one or two breeding stations among all the sugar-producing Islands. These stations might be at Barbados and possibly Demerara. Some objection was raised to locating a station in Trinidad owing to the prevalence of froghopper pest.

129. Except in Barbados and Demerara there is keen interest in the new Java varieties of cane which have increased the output and yield per acre of that Island in a spectacular manner recently, but so far sufficient area has not been planted to determine the suitability of these canes to West Indian conditions.

130. Interchange of comparative returns.—There is a very outstanding example of the value of, and the necessity for, some
system of circulating weekly or fortnightly comparative reports among the factories of the British West Indies, in inculcating a spirit of friendly rivalry among the operators and generally improving the technique of the industry. There are four central factories controlled by the same financial group in London, one factory in each of the islands of Antigua, St. Kitts, Trinidad, and Jamaica. Comparative reports are circulated to each factory, and the fact that the lowest recovery reported by this group exceeds the highest recovery of factories outside the group is a conclusive proof of the value of this system.

131. Owing to the isolated position of many factories and the individualistic tendencies of the owners and operators, there is a rather general lack of knowledge of modern developments and practice which could be, to a large degree, corrected by fostering a competitive spirit through a West Indian Sugar Association, as is suggested in paragraph 25. Such an Association might well have its headquarters in Trinidad, where we were assured the co-operation of the staff of the Imperial College of Tropical Agriculture would be freely given. In this way a point of contact would be established between the staff and research workers at the College and the operating personnel of the factories which would be of great value to all concerned. In addition to circulating comparative reports, an Association should have, at least annually, meetings of the members for the presentation and discussion of papers on the various phases and developments of the technical work of field, transport and factory. Much has already been done by other Associations and Societies in various countries, but the papers of these Associations, although widely quoted in various technical journals, do not appear to reach a large proportion of West Indian sugar producers. The preparation of papers by individual technologists in the West Indies, which would require correspondence and consultation with others interested in the particular phase of the work, would arouse general interest. Also, papers dealing with the work in the Colonies, if printed and distributed to all members, would probably be read where papers prepared for other Associations might be laid aside as not applicable to West Indian conditions.

132. Sugar Associations in the various cane-sugar producing countries of the world, in 1924, formed the International Sugar Technologists’ Association and held their first meeting in Hawaii. Meetings of the International Association are held triennially, and subsequent meetings have been held in Cuba in 1927 and in Java in 1929. If a West Indian Association is formed it would probably affiliate with the International Association and adopt the uniform nomenclature and methods now under discussion by that body.

133. Credit facilities.—The larger sugar-producers made no general complaint of difficulty in obtaining credit facilities
through the ordinary commercial channels, although in Antigua it was emphasised that, owing to low prices and poor crop, it had been impossible to repay loans this year, and that the high interest rate charged on loans which were not repaid was oppressive. In the case of loss of the present Imperial preference, without any compensating provision, there would be an immediate restriction of credit facilities which would hasten the collapse of the industry.

134. The financing of small farmers is usually done by the central factories, which grind the cane, either dealing directly with the farmer or through small Agricultural Credit Societies. The second method is very much more satisfactory for a variety of reasons.

135. The members of the Credit Society guarantee the debt of the Society to the central factory jointly and individually. Therefore, there is much less danger of loss due to bad debts.

136. As the members are interested financially in each loan made, they are careful that each loan is well secured; in other words, the farmers in the district supervise the loans as a group, thereby reducing the amount and the cost of the supervision necessary by the central factory.

137. All members are interested in seeing that canes for the growing of which loans have been made are sent to the factory in the name of the Credit Society and not surreptitiously diverted to some other factory.

138. In addition, harvesting can be carried on in a much more orderly manner as a number of railroad cars may be allotted daily to the Society in proportion to the quantity of cane to be supplied, and the distribution of tonnage is arranged by the members, again saving the cost of having these arrangements made by the staff of the factory.

139. There is little or no trouble regarding the weight of canes delivered, and any difficulty which may arise is settled by the members themselves.

140. All these factors reduce the cost of farmers' cane to the central factory and enable the factory to pay a higher price than can be given when loans or advances are made and supervised individually; also a healthy co-operative community spirit is developed by these Credit Societies, and their use can be extended to disseminating information among the small farmers.

141. Imperial College of Tropical Agriculture.—Before leaving London we had a preliminary discussion with Mr. G. Evans, the Principal of the Imperial College of Tropical Agriculture at Trinidad, and we were met by him at Barbados, where he attended all our meetings and accompanied us in our visits to estates in the Island. Both in Barbados and later in Trinidad
Mr. Evans took great pains to give the Commission every assistance possible in considering how to enable the future work of the Imperial College to be of assistance in furthering the interests of the West Indian sugar industry and other agricultural industries. While in Trinidad we visited the College on two days, which were spent in long and interesting conversations with Mr. Evans and other members of his staff on subjects bearing upon our enquiry. Among other matters discussed Mr. Evans communicated to us particulars of the scheme recently framed for the approval of the Secretary of State for the future organization of the Advisory Branch of the Imperial College and the Departments of Agriculture in the Leeward and Windward Islands. We shall refer to some weaknesses in the existing organization of the Leeward Islands Departments of Agriculture, and it appears to us that the scheme now formulated will be likely to improve the administration of those Departments and their interests both in the Leeward Islands and in the other islands with which the Advisory Branch will have to deal. Evidence was given on behalf of the Planters' Association in our public sitting, and Mr. Evans bore witness to the same effect, of the very cordial relations existing between the Trinidad planters and the College, of the assistance the former had already received in dealing with problems of immediate practical interest from the researches made by the College staff, and of the confidence felt by the planters that the far-reaching enquiries of scientific research, which it is the aim of the College to maintain in relation to all problems of tropical agriculture, will bear further fruit in practical advantage to local industry. We were ourselves much impressed by the interest and value of the researches which were discussed with us by the several professors, not only in relation to problems of tropical agriculture generally, but, as we feel justified to hope, in specially advantageous relation to those problems of the West Indies which are raised by the present situation of the sugar industry, and the necessity both of improving that industry and supplementing it by other modes of production.

142. We could not but be impressed with certain difficulties, with which Your Lordship's Department and the Board of Governors of the College are, doubtless, quite familiar, in the present position of the Principal of the College in relation to the various responsibilities officially laid upon him and semi-officially or unofficially expected of him and his staff. The College is primarily the Imperial (Educational) College of Tropical Agriculture, and at the same time a Research Institute for the scientific investigation of all problems bearing upon the science and art of tropical agriculture. In this respect, its constitution is analogous to that of agricultural research institutes in the United Kingdom associated with educational colleges or universities; with the somewhat important complication that, whereas in Great Britain the provinces of research are distri-
buted between a considerable number of colleges, the Imperial College is intended and has been, as far as possible, equipped and staffed to deal with problems in all departments. This circumstance in itself, and the more so in combination with the duties of the Principal of the College, lays upon the ability and energy of the Principal a somewhat exceptionally heavy tax. In addition to this, he is at present nominally in the position of controller of the activities of the Advisory Branch of the College which is virtually a West Indian Department of Agriculture. Further, in view of the contribution made by Trinidad planters and by the Government of Trinidad to the expenses of the College, the community of Trinidad, not unnaturally, regard themselves as having a peculiar claim upon the services of the College and its staff in regard to the solution of immediate practical problems of agricultural technics. Further, it should not be forgotten that the College was munificently endowed with a complete model sugar factory, at a cost of £25,000, with the special view of promoting the study of sugar production.

143. Valuable and important work has, in fact, already been done by the College, as is recognized, in direct relation to the sugar planting and producing interests of Trinidad, and this has naturally been the more the case because the Agricultural Department of the Colony has not, it would appear, been of late very efficiently staffed or very adequately equipped for dealing with the problems of these industries.

144. But this combination of duties and imputed duties is liable to encroach somewhat severely upon the more general purposes of the College contemplated in its later developed constitution. For example, the problem of the froghopper pest being one of the most important in the sugar industry in Trinidad, special attention to this problem has been given by several of the professorial staff, with exceedingly interesting and promising results. For dealing with this question there is not only a general Committee, composed of agricultural experts and planters, but there is a special Standing Committee exercising continuous functions, of which Professor Hardy (Professor of Chemistry) has been acting as Chairman. This kind of employment, although willingly undertaken by the College, appears to us to be of a character which should not, in future, be expected of members of its professorial staff. That staff, and the results of its researches, will remain available for agriculturists, but the responsibility for continuously applying and disseminating information with regard to them should rest with the local Department of Agriculture, as also in regard to the other West Indian Colonies with the officers specially assigned to the Advisory Branch of the College.

145. The Agricultural Departments of all the Colonies which we have visited, with the exception of that of Jamaica, appear,
during a considerable recent period, to have been passing through a rather unfortunate stage of disorganization and, in some cases, of unsuitability on the part of the local administrative officers. This has been notably the case in British Guiana, where we have every reason for confidence that the deficiency has now been remedied by the appointment of an exceedingly well-qualified Director of Agriculture in that Colony. It was so for a period in Barbados; but here again the Island Government and planters have spared no pains and are now devoting a very high rate of public expenditure towards maintaining an exceedingly efficient local department. It has been the case, as we have indicated, in Trinidad and in the Leeward Islands, and we have been disappointed in regard to more than one Colony, if not in all, at the apparent failure to apply well-grounded recommendations which were made for the development of West Indian agriculture by the Royal Commission of 1896-97. Proposals and suggestions which were expressly made by them are now being brought forward as new discoveries and being advocated and argued as if they involved a new and debatable policy.

146. To revert to the particular topic of the Imperial College, we desire to record our high estimation of its value as an Imperial institution, and of the special value which it already has and may have in the future towards the improvement of the economic conditions of the West Indies. The evidence which we received and the conversations which we had with the members of its staff were of great interest and assistance to ourselves in dealing with the work entrusted to us.

147. Conditions of labour.—The low rates of wages received by estate labourers and the poverty of their housing conditions were complained of by such representatives as appeared before us on behalf of the working classes in all the Colonies visited. In Jamaica we received no such direct delegation, but had some opportunity for forming our own judgment to like effect. Wages and housing conditions were also deplored by the Governor of Barbados, the Governor of the Leeward Islands, the Administrator of St. Kitts-Nevis, the Archbishop of the West Indies, and other witnesses who spoke generally on behalf of the industry.

148. Nevertheless, not only was no animosity manifested by witnesses of the working class, or its genuine representatives, against sugar estate employers, but, both in Barbados and in Antigua, where conditions have pressed most hardly, it appeared that good relations were, on the whole, prevalent; the employers desiring to pay as high wages as possible and the labourers recognizing that existing conditions of the sugar industry did not permit of higher wages at present. But, notwithstanding the expressed and justifiable dissatisfaction at the circumstances of sugar estate labourers, very urgent representations were made by witnesses on their behalf that the sugar industry must, by whatever means may be possible, be maintained, not only
because it appeared to them manifestly the only available source of money wages for them, but because, even if other means of livelihood by work on their own land were conceivable, they desired its maintenance as a congenial industry. Further, it was obvious that many who are not content to remain merely estate labourers are anxious that the industry should be maintained in order that they may earn money as cane farmers; and lively interest was manifested by men of this class in the fortunes of the cane-farming industry in Antigua, British Guiana, Trinidad, and Jamaica.

149. Bad housing of West Indian sugar estate labourers is traceable to historical conditions. After the abolition of slavery the old estates villages, whatever may have been their condition before, were very largely allowed to fall into disrepair and decay, no special proprietary obligation being recognised towards their inhabitants. Consequently, where the estate system has persisted unmodified, it is generally the case that the housing of resident labourers on old-time estates is normally very bad, although in Barbados, where the sugar estates are not remote from other centres of population and districts of production and where it may perhaps be said that there is a higher general level of European feeling with regard to such conditions, the labourers' houses are not quite so bad as they are in some other Colonies or districts of other Colonies.

150. Secondly, the introduction of indentured Indian immigrants established, under Government sanction, a very low standard of housing for estate labourers. Habitually it was deemed sufficient that they should be housed in long ranges of single rooms with floors on the ground. These floors were, no doubt, such as the Indian immigrants had been accustomed to and were dressed, by such women as were imported with them, with the traditional compost of cow-dung and clay. West Indian labourers' huts elsewhere had often merely hard earthen floors. On many estates on which indentured coolies were settled the old ranges remain, ruinous, decrepit, and full of dirt and vermin. Their survival, like that of the old estate labourers' cottages, perpetuates a low standard of living which there is a common tendency to regard as being all that the West Indian labourer, whether Indian or creole, needs or desires. That this psychological assumption is an error is proved wherever West Indian or East Indian labourers have been able to own, build, and maintain their own houses. Further, it is unquestionable that a higher standard of obligation in regard to the housing of resident labourers on estates has been manifested during a more recent period. Many estates have continuously, according to their restricted means, improved and re-built and built new houses for their resident labourers, and the usual type now aimed at is at least a two-roomed framed house with a wooden floor raised above the ground. A very good example in this respect was set in Jamaica by the Boston Fruit Company and the United
Fruit Company in their development of banana estates, and this example has re-acted on the practice of other well-found estates in that island. In Appendix 4* we reprint a circular issued by Messrs. Henckell Du Buisson and Company to their estate managers in the West Indies which is interesting in this connection. The aim and practice of other largely capitalized sugar estates may now be said to be similar, but a great deal of housing originally bad and, in many cases, greatly deteriorated, requires to be dealt with. Neglect of this part of estate administration (and also, it may be observed, of good cultivation) has been conspicuously aggravated by the speculative dealings in sugar estates which have from time to time been prevalent, especially during and immediately after the Great War. Whilst estates were thus changing hands no attention at all appears to have been paid to the conditions and rights of the labourers. Numerous particular examples might be given, but perhaps the most impressive was that which we observed in St. Lucia, where the two most important estates, intrinsically very valuable properties owing to the fertility of their land, had changed hands more than once in this manner. On one of these the village of the estates labourers was the worst that we have seen anywhere in the West Indies. On the other, the labourers had, owing to the default of a nominal purchaser, been left without wages for about six months and in order to feed themselves had been forced to depend on the cane-fields. They had destroyed a considerable area of cane for immediate consumption and for marketing on their own account. In another instance, a British Guiana sugar estate, also of very fertile cane soil, had repeatedly changed hands at enormously enhanced prices, its cultivation and administration deteriorating in the meanwhile, until its condition was such that, on account of the insolvency of its final purchasers and increasing neglect of drainage, it is now on the point of abandonment.

151. There appears further to be very little if any supervision of the sanitary conditions of estates by the local Governments, either through deficiency in public health laws or to such powers of inspection and remedy as exist not being exercised.

152. This topic of labourers' housing, of the amenities of their daily life, and of their means of producing subsidiary domestic food supplies, is closely bound up with the question of the possibility of running well-equipped modern factories. This fact has been recognised from the outset by American investors, both in Jamaica and in the Central American banana industry, and also in the development of the Cuban and Dominican sugar industries. On many, indeed perhaps on most, West Indian estates the practice survives of allowing resident labourers a small piece of ground on the estate to grow garden provisions; but usually wherever they have been able to obtain land and house plots for themselves; they greatly prefer not to live upon

* To be published later.
the estates. Moreover, in some districts, the localities available for cultivation by labourers are not on the sugar lands, but often at a considerable distance. In British Guiana they are a long distance away at the back of the estate belt. In Jamaica they are mostly in what are spoken of as the mountains. One of the commonest difficulties represented to us in regard to the labour supply required for economically working efficient factories was that labourers decline to work for more than four-and-a-half days, or even less, in a week. This circumstance may be sometimes due to the fact that in that time the labourer can earn as much cash as he thinks it worth his while to work for in addition to the income he and his wife obtain from their land, owned or rented. But in Jamaica this habit is often manifestly the only one reasonable for the labourer. The small landholder who works for wages in the plains of Westmoreland or in Lower Trelawney or Vere has his home and his ground often many miles away in the mountains. Quite reasonably, and indeed necessarily for his domestic economy, he desires to quit work early on Friday afternoon to get back to his home, for on Saturday his wife has to start at break of day for market. On Monday he will be looking after his own cultivation. Only on Tuesday does his established manner of life make it possible or convenient for him to resume estate labour. This interference with the efficient working of up-to-date factories can only be mitigated by careful attention on behalf of estates to the requirements and convenience of labourers, either by giving those who have not grounds of their own more tempting facilities in the shape of housing or land upon the estates (which has been the policy of the more enlightened large employers we have referred to) or by organizing the whole labour available in overlapping shifts so that at any rate the minimum number of workers necessary on the Monday and up to Saturday afternoon may be available. This is already being attempted with some success on at least one large estate.

153. The loss which the sugar industry suffers through irregularity of labour supply and the causes of that irregularity furnish a difficult and debatable topic to which we were glad to find special attention and study was being given by members of the professorial staff of the Imperial College of Tropical Agriculture. It would not be safe, or, indeed, profitable, for us to dogmatize on the subject. But while it was represented by employers that labourers refuse to work for more than a certain limited time in the week and cannot be induced to do so, even by the offer of higher wages, it was alleged on behalf of the labourers that they are not given sufficient opportunities of employment, which many would be glad to accept even without increase of pay. We have given an example of the reasonable and valid explanation of the unwillingness of some labourers to work for a longer time. On the other hand, it was represented to us that the field work is very exhausting and the labourers in many cases ill-nourished
or in a weak condition through various forms of disease: most of them remediable or very largely mitigable by proper medical care and sanitary administration. One witness attributed abstention from work on Mondays to the drinking of inferior rum on Sundays, and thought it could be mitigated by proper attention to the quality of excisable liquor. Further, well-informed and unprejudiced witnesses expressed the strong opinion that the waste of workable time was largely conducted to by the bad old industrial theory, still manifestly affecting much of the West Indian estate management, that it is necessary to maintain a constant supply of cheap labour, and that, therefore, no labourer must be too highly paid or given too much employment. The restriction of ready money available for weekly pay-bills under present conditions no doubt conduces to shortness of employment and inefficiency of the labour employed. For example, in comparing the cost of cane cultivation on two large estates under the same management we were struck by the much higher cost on the one that was paying the lower wages. On enquiry it was explained to us that one of the reasons for this higher cost was that whereas the labourers had applied for an increase of wages, it was thought more economical, rather than raise their wages, to diminish the amount of task they were required to do for what they were then being paid. It did not, however, appear that the number of tasks done by each labourer in the week was increased. A less lucrative method of dealing with the situation could hardly be imagined, but it avoided increase of the pay-bills. In contrast with these alleged difficulties in obtaining continuous work from field labourers, we ascertained that within the sugar factories generally and in the bauxite works of British Guiana and in the Trinidad oil industry there was no difficulty in obtaining five-and-a-half days' work of ten hours a day (with an hour for meals) at a rate of wages per hour no higher than what is paid to the field labourers. It is difficult to resist the impression that the difference may be accounted for by the cause above suggested—namely, that the field work is conducted upon a fallacious industrial theory that it is better dealt with laxly and without pressure on the lowest subsistence wages, whereas in the factory the economy of full and continuous work is obvious and dominates practice. There can be little question that the general run of work done in the factories, although the earnings are greater, is better worth its pay and more efficient than that of the work done in the fields. We do not offer these observations as a complete analysis of the problem, but they appear to us to afford food for careful consideration, both by the economists of the Imperial College of Tropical Agriculture and by estate managers.

154. In Java (we were informed by Professor Scott of the Imperial College of Tropical Agriculture who had recently
visited that Island) there is no difficulty of this kind because, although great numbers of the peasant labourers do not work for more than four and a-half or even three and a-half days a week, having similarly their own rice and provision grounds to attend to, yet the surplus of population there is so great that there is never any difficulty in finding others to take their place during the rest of the week. This, it may be observed, is one of the factors, coupled with that of a rate of wages of about half the minimum West Indian rate, that enables Java to produce sugar so cheaply. It is not an advantage British West Indian communities need envy, nor are the conditions which afford it such as one would desire to see the West Indies reduced to. The nearest approach to such conditions in the West Indies may perhaps be found in Barbados.

155. In Jamaica and elsewhere we received representations from working-class organizations regarding such matters as the establishment of factory laws, workmen's compensation, and health and unemployment insurance. It is not within our terms of reference to deal generally with these matters, but we may observe that in none of the Colonies we visited (except Trinidad) was there evidence of any system of factory regulation. We have mentioned already the unsatisfactory hygienic condition of many of the factories from the point of view of the consumer; with many very creditable exceptions they are equally unsatisfactory from the point of view of the health and safety of the workers employed in them.

156. We have suggested in our general conclusions that an endeavour should be made by the local Governments to achieve an improvement in the general condition of labourers, both in their houses and in the factories.

157. Peasant farming.—Among the measures of relief which were unanimously recommended by the Commissioners of 1896-97 for the situation then existing, they placed first—

"the settlement of the labouring population on small plots of land as peasant proprietors;"

and second—

"the establishment of minor agricultural industries and the improvement of the system of cultivation, especially in the case of small proprietors."

158. As we show in the several local sections of our Report, considerable progress has been made in some Colonies on these lines. Where progress has not been made we endeavour to indicate the extent and the causes of the failure. We also have, unfortunately, to observe that, where the policy recommended has, for whatever reason, not been pursued, the conditions at the present date appear most disquieting.

159. The Commissioners of 1896-97 observed that—

"the settlement of the labourer on the land has not, as a rule, been viewed with favour in the past by persons in-
interested in sugar estates. What suited them best was a large supply of labourers entirely dependent upon being able to find work on estates and consequently subject to their control and willing to work at low rates of wages."

160. It is manifest that where the economy of a community depends practically entirely, as that of Barbados, St. Kitts, and Antigua, still does, upon a single industry carried on by the employment of wage labourers on estates, the public policy of the class most influential in guiding the Government must almost inevitably incline to this economic view. If they encouraged action which, in their belief, must tend to diminish their labour supply, they would be cutting away the branch upon which they sit. Nevertheless, our survey, after the lapse of thirty-three years, of the conditions prevalent in the West Indies makes it necessary for us to express our strong concurrence in the view of Sir H. Norman's Commission, that—

"no reform affords so good a prospect for the permanent welfare in the future of the West Indies as the settlement of the labouring population on the land as small peasant proprietors; and in many places this is the only means by which the population can in future be supported."

161. In communities such as Barbados, Antigua, and St. Kitts, as also in British Guiana, it is most obvious that, if the cultivation of sugar and the wages which it distributes on estates should be suspended, the labour of the population affected must necessarily be immediately applied to producing its own food. In the islands named, owing to their restricted area and to the maintenance of land monopoly by estate proprietors, and also it must be said through the able and energetic character of the planting class, it has been possible to maintain the estate economy of sugar cultivation almost intact, whereas in other communities it was very largely shattered by the emancipation of slaves. It would be idle to discuss whether this accident of survival in these islands has or has not been, on the whole, of advantage to them as social communities; for, whereas those Colonies in which, after the break-up of the slave sugar-estate system, peasant proprietors were developed are, at the present day, the more generally prosperous, it may be argued that their natural conditions are both more generous and more favourable to a peasant economy than those of Barbados, Antigua, and St. Kitts. There can be no question whatever that these latter, in the event of a sudden failure of the sugar industry, will be in a much more unhappy position than other West Indian Colonies where the sugar industry has not been so effectually maintained, but where peasant ownership and cultivation have been developed. For a peasantry capable both of maintaining itself and of growing exportable produce cannot be created off-hand. It takes a long time to learn to be efficiently self-supporting, and further time to learn how to be prosperous by producing a marketable surplus. It may be said that nowhere in the
British West Indies, except in Jamaica, has resolute, serious, and intelligent attention as yet been given to this double problem, notwithstanding the strong recommendations of Sir H. Norman's Commission: the confidence of which was largely founded upon evidence of Jamaican conditions, with which he was completely familiar and which, even then, were in advance in this respect of those of other communities.

162. Such communities as Barbados, Antigua, or St. Kitts cannot be salvaged in the event of a collapse of the sugar industry merely by allowing the labouring class to rent provision grounds on estates. Nowhere throughout the British West Indies has this system proved satisfactory. The peasant cultivator, if he is to thrive, must have land which he knows is his own and which he can improve, a homestead in which he can take a pride, access by roads, facilities for marketing, and a proper water supply. In St. Vincent some old sugar estates have been, on the recommendation of Sir H. Norman's Commission, broken up into small holdings, with the result of a most remarkable development in that Island's prosperity, as shown by its exports and its annual public revenue. As another result of their recommendations, the rules for the sale of Crown lands in Trinidad were made more liberal. Smaller holdings were sold at an easier price. This policy had already been adopted by the Government of Jamaica and at the present day facilities are afforded, through Agricultural Loan Banks, for the purchase and breaking-up of suitable large estates. No action, however, nor any attempt at action in this direction, so strongly and so well-advisedly recommended by Sir H. Norman's Commission, was taken in Barbados or St. Kitts. With regard to the latter community, this is perhaps the more remarkable because, in the Report of Sir H. Norman's Commission, express comparison was made between the conditions of life in Nevis for the agricultural labourer and those in St. Kitts. In Nevis, among small proprietors, there was comparative prosperity and self-respect. In St. Kitts there was squalor and degradation among the great majority of the labouring classes. And concurrently with the resolute adherence to the policy of estates monopoly in St. Kitts, the population of that Island has, since 1897, diminished by 43 per cent.; conditions of life there having apparently become intolerable to more than 2/5ths of the population. That is not prosperity. The population of Nevis has also diminished, but only to the extent of 9 per cent.

163. In view of the permanence of the menace of the present conditions of sugar marketing to the possibility of maintaining that industry in Barbados and the similar islands, a menace the early materialization of which can only be averted by means of some intervention by the Imperial Government, it appears to us that it is a matter of Imperial interest that no assistance of this character should be given by the Imperial Government to the West Indies except upon the understanding that the recom-
Mendations of the Royal Commission of 1896-97 are to be seriously taken to heart and embodied in a continuous policy: that is to say, that deliberate steps should be taken, as have been taken for many years past in Jamaica, for placing many more of the population upon a self-supporting basis. The difficulty of embarking upon such a transition in Barbados and other sugar districts (for British Guiana needs a similar policy) is indisputably very great, but a resolute effort should be made to surmount it.

164. In Part III we deal more particularly for each Colony with the questions immediately affecting the sugar industry.

165. In compliance with Your Lordship’s expressed desire, the Governing Body of the Imperial College of Tropical Agriculture arranged for Mr. G. A. Jones, Assistant Commissioner of Agriculture for the Windward and Leeward Islands, attached to the staff of the College, to accompany us as Agricultural Adviser to the Commission during our investigations in Barbados, the Leeward and Windward Islands, British Guiana, and Trinidad. Mr. Jones participated fully in all our proceedings and in the drafting of our reports on the technical and agricultural aspects of all the matters dealt with. We requested, and this request was acceded to, that Mr. Jones should be allowed to accompany us also to Jamaica, both because of our appreciation of the great value of his personal assistance and collaboration and because, in many respects, so much more progress has been made in Jamaica than anywhere else in the West Indies, in the building up of a sound economy for tropical agricultural communities of the character we have been dealing with, that we felt confident that it would be of substantial advantage to his work in the Windward and Leeward Islands that he should have this opportunity of observing how much has been accomplished in developing the potentialities of small-holders’ production, and the methods by which it has been accomplished, concurrently with the maintenance and development of estate industry in Jamaica. Mr. Jones assisted us in Jamaica, as elsewhere, in ascertaining the position of the sugar industry of the Island and the preparation of the material for our report thereon. When we left Jamaica, he remained there with a week at his disposal for further study of local problems of agricultural organization and development. Whilst, therefore, we have not been able to procure his signature to this Report, we consider ourselves justified in saying that it has his concurrence and has, indeed, in large measure, been prepared in full collaboration with him. Mr. Jones’ reports, as Agricultural Adviser, on agriculture in the several Colonies visited will be found appended to Part IV* of this Report, in which we shall make some subsidiary observations on conditions deserving attention in the various Colonies.

* To be published later.
PART III.

SITUATION OF THE SUGAR INDUSTRY IN THE SEVERAL COLONIES.

1.—Barbados.

166. We arrived in Barbados on the 17th of October, 1929, and left on the 26th of October.

167. Five public sittings were held during this visit and a sixth was held on the 12th of November, when we called at the Island on the way from St. Lucia to British Guiana. Twenty-nine witnesses were examined publicly and private discussions were had with the Governor and a number of other persons. We visited all parts of the Island and inspected eight representative sugar factories.

168. During our stay in Barbados we had the advantage of the company of Mr. G. Evans, Principal of the Imperial College of Tropical Agriculture, who attended our meetings and accompanied us on our visits.

169. Barbados had at 31st December, 1928, an estimated population of 167,953. Its area is 106,470 acres, of which 67,682 acres is estimated to be cultivable. The whole of this cultivable area is actually under cultivation, 35,000 acres being at present planted with sugar-cane.

170. The number of persons directly engaged in the sugar industry of Barbados is about 34,000, and allowing two dependents for each worker the number of persons directly dependent on it is over 100,000. A very large proportion of the remainder of the population is indirectly dependent upon it.

171. The total exports of Barbados in 1928 were valued at £1,531,265. The exports of domestic produce were £1,226,769. £1,167,693, or 95 per cent. of this total, was the value of sugar and sugar products. (For details of the total exports and exports of sugar in previous years, see Appendix 2.*) The imports for domestic consumption (i.e., total imports less re-exports) in the same year were £2,044,163.

172. In the year ended 31st March, 1928, the revenue amounted to £414,880 and the expenditure to £481,250; the estimates for the year ending 31st March, 1930, are revenue £403,498 and expenditure £412,133. The excess of assets over liabilities at the 31st March, 1929, was estimated to be £147,260. The long-period public debt outstanding at the 31st December, 1929, was £610,000, against which sinking funds amounting to £298,320 were held.

173. Cost of cultivation of cane.—The greater part of the land used for cane cultivation in Barbados may be divided into two distinct classes—the black soil areas, of about 31,100 acres, and the red soil areas, of about 15,480 acres, the proportion being about 2 to 1.

* To be published later.
174. According to the representative costs of cultivation obtained for these areas, the cost per ton of cane harvested is higher in the black soil districts (averaging about $4.50 per ton) than in the red soil districts (averaging about $3.74 per ton). On the basis of nine tons of cane to one ton of sugar, the difference in cost per ton of sugar would be about £1 8s. 6d. This higher cost is in a large part due to the necessity of planting fresh cane in black soil areas for each crop to be harvested, whereas in red soil areas, after the crop from the plant cane is harvested, a crop of first ratoons is obtained in the following year and in some cases second ratoons in the year after that. The elimination of the planting and the lower cost of cultivation for the first and second ratoon crops reduces considerably the average cost of the canes from the red soil districts.

175. Cane varieties.—The Department of Agriculture in Barbados has in the past been noted for breeding new and excellent varieties of cane, and Barbados varieties are found, not only in all the West Indian islands, but in most other cane-sugar countries. There has consequently been a proper pride in Barbados that they can produce the seedlings best suited to their needs.

176. The inability to ratoon these canes is a very serious deficiency, and we recommend that tests should immediately be undertaken with hitherto untested varieties (such as Uba or earlier seedlings of Java canes or hybrids of these with local varieties) in order to obtain, if possible, a cane which will yield one or more satisfactory crops of ratoon canes on black soil areas.

177. The amount of sucrose in these hardier, drought-resisting varieties may not be so high as that of the local hybrids now cultivated, but it is very probable that much higher tonnage of cane may be obtained per acre, with a rather higher total yield of sugar, and if a good ratooning variety is found, at lower cost. The average yield of cane per arable acre devoted to cane cultivation in black soil areas is about 14 tons per acre owing to the fact that only about 50 per cent. of this area can be harvested in any one year. In red soil areas we recommend the introduction and testing of some of the newer high-yielding varieties, none of which has hitherto been tested on field scale in Barbados. (For example, P.O.J. 2878.)

178. Manuring.—Very large quantities of pen or stable manure are used. In addition to this, a considerable quantity of artificial fertiliser (Sulphate of Ammonia, Nitrate of Soda, Sulphate of Potash, Fish manure, etc.) is used. Properly conducted field tests by means of experimental plots in representative districts of the Island should be laid out to determine the proper proportions of ingredients, time of application and quantity, to give optimum yield.

179. By laying out these tests in co-operation with planters, as far as possible alongside main roads, with legible sign-boards
marking the areas and the treatment, local interest in the work can be greatly stimulated and all passers-by can watch the progress of the tests. In order that the significance of the test may be properly understood by all planters, the number of variables in any one test should not be great. The results of these experiments should be evaluated and circulated among all concerned, as suggested in our general recommendations in paragraph 122.

180. Livestock.—The cost of maintaining livestock throughout Barbados is in general higher than that in the chief competitive cane-producing areas. This cost is in a large measure due to the use of mules which are all imported at considerable expense and high subsequent cost for fodder, harness, etc. The extended use of cattle in a manner similar to that of Cuba and Porto Rico would reduce the cost of stock.

181. Attention should be given to the preserving of cane tops, guinea-corn or grasses in silos to provide fodder in dry periods when harvesting is not in progress.

182. Ploughing and cultivation.—The ploughing is chiefly done by oxen, but the subsequent cultivation of the cane is principally by hand and is very thoroughly done, as there is an abundant supply of labour available. The cost of cultivation per ton of cane is comparatively high and in case of further depression of the industry necessitating further reduction of costs it might be possible to obtain satisfactory yields of cane with considerably reduced expenditure on cultivation by the use of implemental tillage. This change would displace a large amount of labour during the off-season, for whom other work would have to be found; for instance, cultivating their own food-crops.

183. There is a law in force whereby a "located" labourer who rents a small area of land from an estate can demand that the estate employ him for five days per week; on the other hand, the estate can demand his services for five days per week. Some modification of this law would be necessary to meet altered conditions if implemental tillage is adopted; for instance, the obligation might be made to apply to the harvesting season only.

184. Factories.—There are 29 factories making 96° sugar, which, during the three years 1926-28, milled an average of 556,000 tons of cane each year, equivalent to about 19,000 tons of cane for each factory, or about 2,000 tons of sugar each. Four factories are equipped to deal normally with about 50,000 tons each, but ground on the average about 37,600 tons only.

185. The opinion is prevalent that a factory to grind 50,000 tons of cane is the economic limit for local conditions. In most sugar-producing countries it is recognized that the cost of manufacture is generally lower per ton of sugar in very much larger factories. We are of opinion that three or four well-located factories with suitably organized transport arrangements would
be able to deal with the entire cane output of Barbados much more economically than the present system, but, owing to the low returns (if any) which would be obtainable on the capital necessary to build these factories and equip the transportation systems properly, we doubt whether funds could be obtained for this purpose.

186. The extension to 5,000 ton capacity factories has taken place during recent years, and we recommend that every effort be made to bring the better factories up to full capacity by diverting canes from windmill and steam plants and that further extension of these factories be proceeded with as soon as canes are available. Development along these lines will not entail large capital expenditure, and where the necessary funds are not available it would be advisable for Government to facilitate the obtaining of funds for the extension and improvement of approved existing factories with a view to further centralization. All extensions and improvements should be made on a previously worked out plan so that, when the extensions are completed, the factory will be properly arranged on modern lines with a view to saving labour and reducing manufacturing costs. Tram-lines for the haulage of cane are not generally used, as a good system of roads is available.

187. According to the chemical reports available for 11 of the 29 factories, the work done in the well-equipped factories is comparable with that done in other cane-sugar producing countries, but in no case is a factory being operated to full rated capacity. In this connection, it is well to point out that the general practice to-day is to obtain an output from a factory 10 to 20 per cent. higher than the accepted “normal rating.” The cost of manufacture can be very considerably reduced by obtaining the maximum possible output during the short milling season of four months.

188. The present system of payment of labour in the factory at a fixed rate per ton of sugar produced does not permit of the reduction of the labour-cost of manufacture by increased output. This system is general where the labourers have to actually handle the cane or produce, as in loading cane in the cane-carrier, or bagging and warehousing of sugar, but for the other stations in the factory the payment of a regular daily wage is general, so that increased output results in lower labour costs.

189. Interchange of comparative returns.—At the present stage of development of the central factory in Barbados great incentive to improvement of methods and better work would be given to the operators by the weekly or fortnightly interchange of returns on a comparative basis showing the factory results, as is suggested in paragraph 131.

190. The difficulty in obtaining information regarding the efficiency of the factories and the cost of manufacture of sugar
is, to some extent, a gauge of the effectiveness of the technical control. Eleven factories submitted more or less complete chemical returns and 10 submitted cost returns which related to 29,829 tons of sugar for the year 1928, or 47 per cent. of the output only.

191. Shipping facilities and methods.—All the sugar, syrups, and molasses manufactured in Barbados is exported through the port of Bridgetown. Some considerable portion is delivered to the port by the Government-owned railway, the balance comes by road. All the sugar is deposited in merchants’ warehouses in the port area, awaiting shipment. Sugar arriving by rail is carted from the railway trucks to these warehouses. As the sugar is now purchased outright by the merchants, it is weighed into the warehouses and sampled for polarization. This work has all been already done in the larger factories before delivery. When sugar is being shipped it has to be carted from the warehouses and handled into lighters for delivery to the ocean-going vessels in the bay. This whole system of selling and shipping sugars has been built up on the production of small factories, and is very expensive. There is room for a very considerable saving if the larger factories arrange to market their sugar in the terminal markets in place of Bridgetown, eliminating unnecessary weighing and sampling charges, also excessive discount, as now charged for loss in weight. A plan is now under consideration for the erection of public warehouses at the railway terminus where a wharf can readily be built to permit lighters coming alongside to receive sugar. This would eliminate a large portion of the present cartage and porterage. The construction of this wharf and warehouse should be pushed forward as quickly as practicable; the warehouse should be arranged for easy access by railroad, road transport, and lighter, and it would prove of great value, not only for the export of produce, but also for the import of supplies. We suggest that this project might properly receive assistance from the Colonial Development Fund.

192. Peasant farming.—It was estimated to us that some 15,000 acres of land in Barbados are cultivated by peasant farmers and estate labourers renting small plots of land. A large proportion of this land is planted with sugar-cane which is sold to the factories, so that these peasants or labourers are to this further large measure dependent on the cane crop for ready cash.

193. Department of Agriculture.—The Barbados Department of Agriculture is organized on a rather elaborate scale for serving such a comparatively small territory.

194. A Geneticist is employed on breeding new varieties of canes. This work is particularly important to Barbados, as it is very desirable that new varieties should be obtained which can yield ratoon crops of black soil areas (see paragraph 176 above).
195. Manurial tests have recently been started somewhat along the lines outlined in the previous paragraph on manuring. The real and immediate value of this work to Barbados can only be realized if the interest of the estate owners, peasant farmers, and located labourers can be aroused (through Agricultural Societies), and the tests extended to the planters' own fields.

196. Pest control.—The Entomologist of the Department is engaged in breeding and liberating large numbers of parasites (Trichogramma Minutum) of the moth borer (Diatraea Saccharalis) which is believed to reduce the yield of infected areas by 15 per cent. to 20 per cent. If control of this pest requires continued breeding and liberation of parasites, that is, if it is found that the parasite does not establish itself and, after a reasonable time, control the pest without help, we consider that attention should be concentrated on obtaining a parasite which will hold the borer in check under Barbados conditions. We would point out that a main method of controlling this pest in other countries is to soak the seed cane for a period in water or in solutions of various chemicals to destroy the borers before planting out in new fields. This elementary method of control is not generally practised in Barbados. The Department might bring this method to the notice of planters.

197. Chemical Laboratory.—In addition to general analytical work for the Island, the chemical staff have undertaken a soil survey and are doing some excellent research work on the boiling and crystallization of sugar. At a time when sugar is being produced at little profit or at a loss it is doubtful if a comparatively small producer such as Barbados is justified in incurring considerable expenditure for this work.

198. The people of Barbados have been very much alive to the great advantages of scientific work in the development of their sugar industry and deserve great credit for their enterprise in this direction. Funds have been voted freely and work carried out carefully. This work has proved of great value and importance, not only to Barbados, but also to many of the other West Indian islands and other sugar-producing countries.

199. As far as we can judge, the work of each department is in the hands of thoroughly competent men and any suggestions we offer are intended to draw attention to the more immediate economies that can be effected in the event of further reduction of returns from the sale of sugar.

200. Alternative crops.—Little attention has hitherto been given by the Department of Agriculture to the education of the labourers and small-holders in the growing of their crops, and we suggest that better and more diversified crops would result were attention to be paid to this side of the work.

201. In Barbados there does not appear to be any alternative crop to take the place of sugar-cane, and provide employment
for the dense population, but in some localities areas could undoubtedly be planted with food-crops to maintain an ample supply of foodstuffs. In addition, there appear to be areas suitable for the growing of fruits, such as breadfruit, bananas, and mangoes:

202. There is no evidence of attention being given to afforestation, and there is apparently no considerable tract of land that can be spared for this purpose. There is, however, some room for afforestation in the "Scotland" district, and it is probable that there are other parts where areas of trees might be usefully planted.

203. Credit facilities.—Credit facilities are obtained by estate owners from the Agricultural Bank. This Bank was established in 1902 with the £80,000 granted by the Imperial Government following the visit of the Royal Commission in 1896-97 and has been carefully and efficiently managed so that the capital available for loans now amounts to £190,000.

204. There is an Ordinance which provides for the formation of Agricultural Credit Societies whereby peasant proprietors and others can obtain loans for agricultural purposes from the Agricultural Bank. So far, no societies have been formed, although the Ordinance was passed in 1924, and little effort has been made to organize the formation of these societies; consequently, peasant farmers experience great difficulty in obtaining credit facilities.

205. Economic position.—The economic position of the community of Barbados appears to differ from that of other Colonies which we visited, in that a substantial amount of income is annually remitted into the Island from abroad. This fact is indicated by the continuous excess of the value of the imports over that of the exports. The figures of the five years 1924 to 1928 are as follows:

<table>
<thead>
<tr>
<th></th>
<th>Imports</th>
<th>Exports</th>
<th>Excess of Imports</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>£</td>
<td>£</td>
<td>£</td>
</tr>
<tr>
<td>1924</td>
<td>2,556,297</td>
<td>1,849,301</td>
<td>706,996</td>
</tr>
<tr>
<td>1925</td>
<td>2,296,359</td>
<td>1,421,085</td>
<td>875,324</td>
</tr>
<tr>
<td>1926</td>
<td>2,155,167</td>
<td>1,287,161</td>
<td>868,006</td>
</tr>
<tr>
<td>1927</td>
<td>2,300,108</td>
<td>1,603,531</td>
<td>696,577</td>
</tr>
<tr>
<td>1928</td>
<td>2,349,159</td>
<td>1,531,265</td>
<td>817,894</td>
</tr>
<tr>
<td></td>
<td>11,657,090</td>
<td>7,692,293</td>
<td>3,964,797</td>
</tr>
<tr>
<td>Average</td>
<td>2,331,418</td>
<td>1,538,459</td>
<td>792,959</td>
</tr>
</tbody>
</table>

These show an average annual excess in the value of imports over exports amounting to nearly £800,000.
206. Barbados is an agreeable island for residence. Its natives love and are proud of it and, whether white or coloured, preferentially make their homes there. It is evident, and we had information to that effect from the bankers, that a large amount of investments is held in the United Kingdom, Canada, and elsewhere by white Barbadian residents, the interest on these, collected through the Banks, amounting to at least £150,000 per annum; and from the same witnesses, as well as from the Island Treasurer, we gathered that very substantial annual remittances, estimated to be at the very least £100,000 per annum, are made by coloured Barbadians who have prospered abroad, especially in the United States, or are employed on the Isthmian Canal Zone, to their families and kinsfolk in the Island, where many of them have bought house lots at high prices and built good houses, and continue to do so. On the other hand, whilst some white Barbadians who have in the past (especially during the prosperous years during and after the War) made large profits out of the sugar industry of the Island reside in England and still, when sugar is profitable, draw a certain amount of their income out of the Island, there is on the whole comparatively little absentee ownership. Moreover, Barbados receives some benefit from the expenditure of tourists and visitors to the Island, and the purchase of stores, etc., by ships. The latter expenditure was estimated by a competent witness at £55,000 per annum. These circumstances, pro tanto, place Barbados, in so far as the better-to-do classes are concerned and in so far as the revenue and social institutions of the Island depend upon their expenditure, in a better position than almost any other of the West Indian Colonies dependent upon sugar to bear up against the effects of a temporary failure of profit in the sugar industry. No such consideration, naturally, applies to the labouring classes, who depend entirely upon wages, although the receipt in the Island of so much income from abroad might, to some extent, mitigate a failure of wages in the sugar industry by providing other demand for labour services.

207. Assuming the sugar market to remain in its present condition, the estates cultivating the black soils in Barbados, which make up about two-thirds of the area, can only produce at a loss of about £2 to £3 a ton. The crop to be reaped in 1930 is about to be harvested. There has not so far been any appreciable reduction of employment, nor is there likely to be until after the crop has been reaped. The crop to be reaped in 1931 has also been planted and will, no doubt, be cultivated for harvest; but, as the result of two crops (1929 and 1930) being reaped at a loss; the 1931 crop will be worked under serious difficulties, and it may be difficult to avoid a reduction of wages. Such economies in cultivation and transport as we have suggested might be possible are not likely to be undertaken unless the prospect of prices improves. Assuming present conditions to continue, it must be expected that there
would be a very considerable throwing up of sugar cultivation during the course of 1930. There might be little or no planting for 1932. Any such abstention from re-planting would mean a very serious reduction in the employment of labour.

208. Under present conditions, the estates on the red soils might be expected to carry on in the hope of a revival of prices, although these estates are at present making little or no profit. Attention would, no doubt, be given on these estates to the possibility of further economies, and, if there could be any assurance of the further maintenance of the industry, further centralization of factories and improvements in manufacture and transport might be effected. Capital for these purposes, however, would not be available under present conditions. Any reduction in the expenditure on cane cultivation or in the purchase of canes from labourers would, in the judgment of the financial officers of the Government, result immediately in a reduction of the public revenue of the Island, which depends very largely upon the importation of foodstuffs and other necessaries of life. For the last three years the public expenditure of the Island has exceeded its public revenue. Some of this expenditure has been for extraordinary public works, especially the improvement of roads. Special expenditure for sanitary purposes and on the medical services has also been incurred. The expenditure on the Agricultural Department has been increased very considerably. All these are services conducive to the maintenance of productive efficiency. Reduction under these heads of expenditure and on education, which also presumably contributes to the efficiency of the community, will probably become imperative. It was suggested to us that there might possibly be some economy in expenditure on the police force. The Colonial Secretary and the Treasurer expressed the opinion that a reduction of cane cultivation, even to the amount of about one-third, would cause considerable difficulty in the matter of the efficient conduct of the public service, and by throwing a number of people out of employment would put the Government in great difficulties. The Treasurer said “the people would be starving and would have to be fed.”

209. Having regard, however, to the circumstance that the community of Barbados does not depend entirely upon income earned by sugar production in the Island, to the probability that the reduction of wages distributed to employ labourers and the throwing out of employment of others would be at first only partial, and to the fact that the Colonial Government has still certain surplus balances available, including £100,000 reserved for use in special emergencies, there does not appear to us any probability that the Island Government would be unable to carry on for the present, on its own unaided resources; though considerable impoverishment and difficulty would be imposed upon the community. The expenditure for poor relief, amounting to
about £40,000 a year would, no doubt, increase as, owing to the peculiar social conditions prevailing in the Island, there is an exceptionally large number of children and weakly persons dependent upon the wages of the able-bodied population.

210. We have considered above the effects of a continuance of present market conditions. Should the Imperial preference be removed in addition, those effects will be correspondingly intensified; the production of sugar for export will very rapidly cease almost entirely, or, so far as it survives, be carried on on a basis of even lower wages than now prevail, and the decline in trade and revenue will be even more serious, so that it may be impossible for the Government of the Colony to be carried on without Imperial assistance.

211. In the event of Barbados estates finding it impossible to carry on the manufacture of sugar, a serious problem as regards the feeding of the labouring population dependent on that industry would immediately be set up. The only alternative exportable estate crop at present in sight is Sea Island cotton, the market for which is extremely limited and precarious and the cultivation of which could only employ at best a fraction of that now employed in sugar production. Under the existing economy, large quantities of sweet potatoes, yams, tannias, and some cassava are cultivated as estates' catch-crops by the employment of labour at wages, and are sold for consumption to the general population. A certain quantity of sweet potatoes has at times been exported for sale. It is improbable that this export could be increased to any material extent. There would remain the problem of producing by local industry the whole of the food of the labouring population now dependent upon the wages of sugar estates. Whilst it might be possible to do this by an extension of the present local provision cultivation, it is obvious that this production could not be continued on its present lines, since the present sugar-producing labourers would be earning no money to buy the provisions grown on the estates and thereby to pay the wages of the labour employed in producing them. In so far as these products remained marketable, their value would be greatly reduced. Further, the whole economy of such smallholders' cultivation as now exists, principally on rented lands, would be destroyed. This is based on the renting of small pieces of ground to estate labourers at the very high rate of £4 16s. per acre per annum, which rent they succeed in earning out of the proceeds of cane grown and sold by them to the factories. This source of money income would disappear, and if labourers are to grow provisions on land in their own cultivation, but not their own property, the rent to the estates must be reduced to a purely nominal figure. Even under present conditions the labouring cultivators of Barbados, in so far as they work on their own or rented land, are not in a position to produce any marketable crop,
except cane and perhaps a few pounds of cotton, to bring them in money for clothes and other necessities. The productive capacities of the labouring and peasant classes, therefore, in so far as they at present depend upon the sugar industry, would be reduced to the mere production of dietary vegetables, with the addition of such milk and meat supply as could be produced from the cattle, goats, and sheep now owned or reared by them for estate proprietors. The economic position of such a community, even assuming that the food supply could be maintained, would be extremely penurious.

212. Emigration.—The negative report given by the Commissioners of 1896-97 on the question of the possible fields for emigration from Barbados is, we regret to say, equally and with a more discouraging effect applicable to-day.

213. The former openings for the employment of Barbadian emigrants in foreign countries have of recent years become increasingly restricted.

214. Brazil and Venezuela are now closed to them. The demand for harvest labour in Cuba has ceased. Very few West Indian immigrants are now allowed to enter the United States of America. The unoccupied lands of British Guiana, of which the Commissioners of 1897 made mention, cannot be regarded as available for Barbadian colonization, while, in the event of the failure of the sugar industry, there would be no demand at all in British Guiana for Barbadian labourers. Moreover, even if very heavy expenditure for making access to and preparing land in British Guiana for settlement could be provided for, no land is at present known to exist in British Guiana that would be suitable or available for such colonization.

215. Trinidad would, under the conditions now existing, appear to offer the most promising field accessible for any migratory settlement of Barbadians. Suitable land exists there and appropriate productive work could be found, but without the sugar industry Barbadians could not earn wages there by estates work or make their living by cane-farming. The Trinidad oil industry, which is highly mechanized, does not promise any large or increasing demands for manual labour. At present, according to our information, it employs directly only about 7,000 hands, a decrease from about 9,000 employed during the recent period of active development and erection of plant.

216. In the event, therefore, of a failure of the sugar industry, emigration can, at best, offer Barbadian labourers only a very limited and inadequate escape from the distress which would be inevitable. The Barbadian community would have to turn its immediate and active attention to the production of sustenance for its population upon its own soil:

217. We arrived in St. Kitts on the 29th of October, 1929, and left two days later on the 31st. Our stay was curtailed by the difficulty of steamship connections with Antigua, as we were obliged to leave on the 31st in order to make use of the s.s. "Carare" which was very kindly diverted to St. Kitts by Messrs. Elders and Fyffes. We held two public sessions at which 15 witnesses were examined, visited the central factory, and made a complete tour of the Island.

218. The islands of St. Kitts and Nevis lie close together and are administered (with Anguilla) as one Presidency of the Leeward Islands Federation. The estimated population of St. Kitts is 18,300 and of Nevis 12,500. The following table shows for the two islands the total areas, the cultivable and actually cultivated areas, and the areas under sugar-cane.

<table>
<thead>
<tr>
<th></th>
<th>St. Kitts</th>
<th>Nevis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total area</td>
<td>41,851</td>
<td>32,000</td>
</tr>
<tr>
<td>Cultivable area</td>
<td>29,000</td>
<td>24,000</td>
</tr>
<tr>
<td>Area actually under cultivation</td>
<td>18,000</td>
<td>4,600</td>
</tr>
<tr>
<td>Area under sugar-cane</td>
<td>12,000</td>
<td>350</td>
</tr>
</tbody>
</table>

(Much land fallow or under grazing.)

219. In 1928 the total exports of domestic produce from St. Kitts-Nevis were valued at £313,438, the value of the exports of sugar being £286,636, or 86 per cent. The principal other export is cotton, valued at £36,038; cotton and sugar are frequently grown on the same estates in St. Kitts, but the greater part of the cotton is grown on Nevis. (For details of sugar and other exports in previous years, see Appendix 2.*) The imports for domestic consumption (i.e., total imports less re-exports) in 1928 were £280,895.

220. The number of labourers employed in the sugar industry in St. Kitts is estimated at 6,000, including their dependents; practically the whole population of St. Kitts is dependent on the industry.

221. For the year ended 31st March, 1929, the revenue of St. Kitts-Nevis was £100,066 and the expenditure £103,192. The estimates for 1929-30 are £91,825 and £91,490 respectively. The surplus of assets over liabilities at the 31st March, 1929, was £1,841 and the long-period public debt £69,250, against which sinking funds amounting to £42,529 were held.

222. Cost of cultivation of cane (see comparative statement, paragraph 119).—Returns covering cost of cane cultivation of

* To be published later.
1,116 acres of cane land in five estates were submitted by the Committee appointed by the Administrator. These are subdivided as full information is not available to make credit for “other crops” on two of the estates. The item of buildings was disproportionately high in the year taken (1928) on account of repairs following hurricane damage.

223. Cane varieties.—The varieties at present grown are mainly B.H.(10).12 and S.C.12/4, and it is stated that the average higher yield of about 21 tons of cane per acre during the years 1925-29 over the yield of about 14\( \frac{1}{2} \) tons during the period 1920-24 is in large measure due to the introduction of these canes. The planters are fully alive to the necessity of testing out new varieties which have proved to be satisfactory elsewhere, and have already introduced through the Agricultural Department some of the new Java canes.

224. Manuring.—It would appear from the cost statements (which are supported by Customs returns) that comparatively little artificial manure is used. A programme of field tests of fertilizer constituents along the lines suggested for Barbados has already been started by the Department of Agriculture in co-operation with planters.

225. Livestock.—The cost of maintaining livestock would appear to be very similar to that in Barbados, and the comments made on this point in regard to Barbados would apply equally in St. Kitts. (See paragraph 180.)

226. Ploughing, cultivation, and harvesting.—The natural conditions of St. Kitts make the cultivation of the soil easy without great expense for draining and round ridging, and the work is thoroughly done. It must be pointed out, however, that the expense incurred in these operations is proportionately high, and in the case of a continued depression of the industry could probably be considerably reduced. There is room for investigation into the cost of the present system of carting cane to the rail sidings, and economy could be effected by the use of inexpensive derricks for transferring canes from carts to railway waggons, as is done in Trinidad, Cuba, and elsewhere. This economy can best be developed by the planter in co-operation with the central factory.

227. Irrigation.—The cane lands in the Basseterre Valley, amounting to about 1/12th (approximately 1,000 acres) of the total area under sugar-cane, are occasionally subject to severe drought, and have recently suffered considerably from this cause. It would be advisable, in place of an ambitious scheme to deal with all this area, to sink test wells at selected points to ascertain whether sufficient underground water is available, and gradually to develop the system of agriculture necessary for the economical use of irrigation water.
228. The surplus water from the factory, which now runs to waste, could well be made use of in preliminary tests with little expense for pumping if found necessary.

229. Factory.—There is now only one central factory in St. Kitts. All sugar-producing areas are connected to this factory by a narrow-gauge railway line encircling the Island. The factory is well-equipped, well-operated, and well-managed, and its manufacturing costs are quite comparable with those of other central factories of similar size. The normal rated capacity of the factory is 180,000 tons of cane, equivalent to about 20,000 tons of sugar. This capacity has not yet been reached, and it may be expected that in good years with the factory operating continuously at or over normal rating even lower costs of manufacture may be attained. Conversely, it must be borne in mind that a continued depression of the industry resulting in curtailment of planting must reduce the output with a resulting increase in cost.

230. Payment for canes.—Payment for canes is made by a first payment equivalent to the f.o.b. value of 5½ pounds of 96° sugar for every 100 pounds of cane sold to the factory provided the canes are of a certain minimum sucrose content which is easily maintained under normal conditions, and a second payment of 50 per cent. of the profits earned by the factory divided among the cane suppliers in proportion to quantities of cane supplied. There is also a fixed minimum price of 10s. per ton of cane.

231. Considerable dissatisfaction was expressed by planters that the factory, under this system of payment, was able to record profits while the payments for canes were not sufficient to meet the cost of growing the canes.

232. With sugar selling at £12 per ton f.o.b., which has been a recent approximate average price, and with the factory costs together with charges allowed under the contract totalling about £5 per ton of sugar, the factory profit would be about 1s. 4d. per ton of cane, and the payments for the canes would be about 14s. 6d. per ton. The net cost of cultivation and harvesting of the cane for the three estates for which full particulars were available averaged 15s. 3d. per ton of cane, but it has been pointed out that certain economies may be effected in the costs of cultivating and harvesting.

In any case, even with this preferential price, there is no margin for planters to cover possible losses due to hurricane, drought, or disease, and at open market prices the average planter could not continue. It must also be noted that the preferential price had dropped, on 31st December, 1929, to about £10 10s. per ton f.o.b. At this price most, if not all, of the planters will incur losses.
233. Interchange of comparative returns.—As the St. Kitts central factory is controlled by an organization controlling central factories in Antigua, Trinidad, and Jamaica, interchange of manufacturing reports between these factories has been in progress for some years. According to the manager, this arrangement has proved of considerable advantage to all concerned, providing great incentive to the technical staff to obtain better results. (See General recommendation in paragraph 131.)

234. Shipping facilities.—The shipment of sugar and molasses is handled in bulk by rail to the factory warehouses and pier and thence by lighter to the ocean-going steamer in a most economical manner.

235. Credit facilities.—Up to the present, estates have had no great difficulty in obtaining crop loans from the Banks.

236. Peasant farming.—The Royal Commission of 1897 very emphatically stressed the need of the development of a proper system of peasant farming in St. Kitts, based on peasant ownership of land. Whilst facilities are given to estates labourers to cultivate garden crops, little or no progress has been made towards the settlement of a stable peasant community. Consequently, the population of the Island has decreased by 40 per cent. since 1897 and the estates are now beginning to find difficulty in obtaining adequate labour. This unfortunate situation would result in very serious distress among the labouring classes in the event of the failure of the sugar crop or continued depression in the industry. Every effort should be made to remedy this position. This matter is more fully dealt with in our report in regard to peasant farming in Antigua, and our recommendations for action there are equally applicable in St. Kitts. With the development of peasant agriculture it would be desirable to enable peasants to obtain loans at reasonable rates of interest by arrangements similar to those available in Barbados.

237. Department of Agriculture.—The Department of Agriculture in St. Kitts is under the Federal Department in Antigua, and the work of the Federal Department will be dealt with in the section dealing with Antigua.

238. The local superintendent is devoting his attention to the diversification of crops, particularly to cotton.

239. Alternative crops.—The estates of St. Kitts are almost wholly given up to the cultivation of sugar-cane with cotton as a catch-crop. St. Kitts soils are well suited to the cultivation of a variety of crops, and an excellent steamship service is now maintained with Canada by the Canadian National Steamships, whose steamers are fitted for cold-storage. During the winter months there is an ever-increasing demand for fresh vegetables in this market, in which a valuable trade might be developed.
240. Economic position.—We have remarked in our observations on Barbados on the effect of the receipt of income from abroad, which in that Colony is considerable. In St. Kitts, whilst there also substantial remittances are made by emigrant wage-earners established in the United States, to relations in the Island, there appear to be very few residents drawing any income from elsewhere; whilst the fact that the central factory's share of the profits earned in the Island is drawn in England goes far to balance the inflow of remittances from elsewhere.

241. With market conditions as they were in 1929, and assuming that the estates in St. Kitts which are now embarrassed by loans paying a high rate of interest can procure further credit, it is unlikely that there would be any great immediate reduction of sugar-cane cultivation, although the planters complain of the present prices as unremunerative; the factory showing profits whilst they are cultivating at a loss. There must probably be some retrenchment of the labour bill, and other economies in production; but the industry would probably struggle on in the hope of an improvement in future market conditions. But with the further fall in price as at 31st December, 1929, there will probably be some diminution of cane supply, and in case of entire loss of the Imperial preference planters could not continue generally to plant and cultivate cane. The result of this would be great distress among all classes and appeals to the Imperial Government for relief and funds to maintain Government services.

242. The public finances of the Presidency of St. Kitts-Nevis are already in difficulties. The revenue during the current year is falling short of the estimate and a deficit on the year's working appears unavoidable. This is due to the depression of prices and reduction of expenditure by all classes in the Island which has already been produced by the low prices of sugar. Should the present situation continue, the deficit on the present basis of public revenue and expenditure must be expected to increase. Our attention was called to the steady increase in the public expenditure in all the Presidencies of the Leeward Islands. It is certainly remarkable that in St. Kitts-Nevis, between the years 1896 and 1929, whilst the population has decreased from 45,600 to about 35,000 (with Anguilla) the public expenditure has increased from £56,500 to £103,192, which, even allowing for the decline in the value of money, represents a large increase in expenditure per head. The heaviest departmental charges on the revenue here, as in Barbados, are for public works and roads, medical and sanitary expenditure, education, and police. With regard to the general administrative charges for the Government of the Presidency and its share in those of the Government of the Colony generally, it was urged upon us that these charges were altogether out of proportion to the resources of the population in
most of these communities. Not having been commissioned to enquire into this subject, we can only express our opinion that it requires the early and prompt consideration of the Colonial Office. If the sugar market does not shortly improve, the revenue of the Presidency will soon be falling far short of the expenditure at present provided for.

243. We have already discussed, in relation to Barbados, the problem which would arise of feeding the population in the event of a complete extinction of the sugar industry, such as must, in our opinion, result from a sudden removal of the preference. Similar considerations apply to St. Kitts, where, however, the habit of growing food crops extensively on estates is very much less developed than in Barbados and the Island population are to a greater comparative extent dependent on imported food. The deficiency of food to be made up would, therefore, apparently be greater in St. Kitts.

244. Emigration.—We have mentioned in our survey of the situation in the West Indies the serious decline in the population of St. Kitts, which has fallen from 31,900 in 1897 to 18,300 in 1928, a decline of 43 per cent. This depopulation has been largely caused by emigration, as well as a high infantile mortality. The excess of emigrants over immigrants in three recent years which were represented to us as typical was, in 1921, 928; in 1925, 796; and in 1928, 597. These emigrants go principally to Santo Domingo; many of them only emigrate temporarily, during the sugar crop in that country, and return eventually to St. Kitts; but a number remain permanently out of the Island. As they are mostly adult males, the effect on the economic power of the remaining population is an even greater reduction than the percentage of the decline of the population would indicate. The population remaining in St. Kitts contains an excessive proportion of women, children, and aged persons, who are partly supported by remittances from emigrants abroad, but in the main form a burden on the productive power of the Island. The proportion of men to women between the ages of 20 and 40 is a little under 1 to 2.

245. The decline in the available labour supply is already embarrassing the sugar estates, and it is desirable in the interests of the estates themselves that the emigration should be checked. We have already suggested that the best method of doing this would be a determined effort to provide facilities for the settlement of labourers on plots of their own in St. Kitts. It will be seen from the table in paragraph 218 that there is a large area of cultivable land not yet cultivated. That policy would also appear to be better able to solve the problem which would arise should employment no longer be obtainable on the estates; emigration in its present form, i.e., emigration of men only, offers
no solution and no system of emigration of families appears practicable, or, possibly, necessary, if the policy of land settlement is pursued.

**Nevis.**

246. After we had arrived at Barbados we received communications from the Administrator of St. Kitts-Nevis, supported by the Governor of the Leeward Islands, pressing that we should pay a visit to the Island of Nevis in the course of our journey northwards. Mr. Allen, the Assistant-Manager of the Canadian National Steamship Line, very kindly made arrangements by altering the time-table of the C.N.S. "Lady Nelson," to enable us to do so.

247. We reached Nevis early on the morning of the 29th October, and were met by the Administrator of St. Kitts-Nevis, who handed us a memorandum and documents. We drove round the Island, visited one sugar factory, and held a meeting in the Court House, where we received representations in support of the memorials that had been presented.

248. The conditions of the Island of Nevis do not precisely fall within the scope of our instructions to report, as the sugar industry there is already practically extinct. The leading recommendation, however, that was made on behalf of the local committee, and which was supported both by the Administrator and by the Governor, was that an attempt should be made to resuscitate the sugar industry by the establishment of a small central factory. The recommendation of the Governor did not go further than that means should be found to provide a small factory to produce sugar for local consumption; that of the local committee and of the Administrator was for a more ambitious project of establishing a small central factory, with a capacity of, say, 2,500 tons output, to produce sugar for export.

249. After observing the conditions of the Island and making such enquiries as the time at our disposal permitted, we found ourselves quite unable to support an application for Imperial assistance for either of these recommendations, though it will, of course, be within the discretion of the local Government to consider whether anything should be done at local expense to carry out the more modest suggestion favoured by the Governor. At present, small quantities of cane are sent from Nevis to the Basseterre central factory on St. Kitts, and as this factory has not yet obtained sufficient cane to operate to full capacity, and as the manager of the factory indicated that he was anxious to obtain canes from Nevis, it might be advantageous to develop a proper system of sea transport so that cane-growers on Nevis could always be assured of prompt movement of their canes to this factory. Such an arrangement would provide for the requirements of the cane-growers of Nevis for some time to come.
250. On the other hand, we were strongly impressed, as were the Commissioners of 1896-97, with the suitability of Nevis for peasant settlement and with its capacities for the production of products such as fruit and vegetables for the Canadian market. Already Nevis is a source of supply of fruit and vegetables to the Island of St. Kitts. The development and improvement of peasant cultivation is, however, greatly interfered with by the form in which the system of large estates has survived. As cane cultivation and sugar manufacture ceased to be profitable the estates have not, for the most part, been broken up, but have been retained in the hands of their former proprietors or, in some cases, resold to speculative purchasers at low prices. The endeavour to obtain an income for the proprietor from the land is maintained by letting patches to small cultivators on the metayer system, that is, in lieu of rent a share of the produce is handed to the owner. There is a considerable amount of well-cultivated cotton planted in Nevis, and evidences are not lacking that fruit, vegetable-growing, and stock-raising could be profitably engaged in by smallholders of land; but we must record our considered opinion that it is impossible to expect any sound permanent development of such cultivation unless steps are taken to enable the small cultivators to obtain and possess their land in freehold. This was, in fact, the view expressed by the Commissioners of 1896-97 with regard to the development of peasant cultivation in all these islands. It has not been followed out, and it appears manifest to us that progress in establishing sound conditions of life in Nevis has been delayed by this fact. We therefore strongly recommend these opinions to the consideration of the Colonial Office and the local Government.

3. Antigua.

251. We arrived in Antigua on the 31st of October, 1929, and left on the 7th of November. We held four public sessions, at which 22 witnesses were examined, and had private discussions with several other persons. Both the central factories now operating were inspected and we visited most districts of the Island.

252. Antigua is one of the Presidencies of the Leeward Islands Federation and is the seat of the Federal Government. Its population is estimated at 30,442. The total area is 68,980 acres, of which 36,430 acres are estimated to be cultivable (excluding pasture land). 19,454 acres are actually under cultivation, including 16,480 acres under sugar-cane.

253. The number of labourers directly employed in the sugar industry in Antigua is estimated at 9,000, forming, with their dependents, over 90 per cent. of the population.

254. In 1928 the total exports of domestic produce were valued at £259,000, of which £250,195, or 97 per cent. consisted of
sugar and sugar products. The principal other export was cotton. (For details of sugar and other exports in previous years, see Appendix 2.*) The imports for domestic consumption amounted to £250,838 in 1927 (figures for 1928 were not available to us).

255. As cotton is generally raised as a "catch-crop," that is, in rotation with sugar-cane, it may be stated that practically the entire labouring population of Antigua is dependent, either directly or indirectly, on the sugar-cane crop.

256. For the year ended 31st March, 1929, the revenue was £95,057 and the expenditure £98,485 (exclusive of an Imperial grant-in-aid, on account of hurricane damage, and gifts). The estimates for 1929-30 were £87,575 and £87,017 respectively. At the 31st March, 1929, there was a surplus of £721; the long-period public debt outstanding at 31st March, 1928, amounted to £145,000, against which sinking funds of £84,145 were held.

257. Cost of cultivation of cane.—(See comparative statement in paragraph 119.) One set of returns of the cost of cultivation covering 697 acres reaped in 1928 was submitted by the Committee appointed by the Governor and a second set covering about 1,000 acres, with detailed costs for five years, by the manager of a group of estates. The estates of this latter group have been greatly improved during this period, so that the average cost of cane production per ton as shown is higher than the present normal cost. Moreover, in the year 1928 a large amount of hurricane damage, uninsured, had to be made good, raising the cost for that year. The costs submitted for the first group of estates may be taken as representative for well-managed estates in a normal year. They amount to 15s. 11d. per ton of cane.

258. Cane varieties.—Canes of a considerable number of different varieties are grown in Antigua; and, as far as we could judge, selection of varieties suitable to the varying soil and weather conditions is intelligently made. The new P.O.J. varieties have already been introduced and their suitability to local conditions will soon be ascertained.

259. Manuring.—Very little artificial manure is used. This is due to the fear of loss following prolonged drought; but one of the larger groups of estates has recently undertaken fertilizer-constituent tests. These might be extended throughout the Island to great advantage. The average yield of cane per acre for six years is 13.9 tons, which is extremely poor.

260. Livestock.—The figures submitted do not make it possible to form any appraisement of the cost of the upkeep of livestock. In the single case in which details were furnished it was pointed out that extraordinary expenditure had been incurred in this connection. On the whole, it appears that the

* To be published later.
use of cattle is more general in Antigua than in Barbados and St. Kitts. Consequently, the cost of reaping the crop is considerably less than in those islands.

261. Ploughing, cultivation, and harvesting.—The standard of cultivation in Antigua is in the majority of cases considerably below that of Barbados and St. Kitts; this may, in some measure, be due to the stringency following the severe drought in 1928. The frequent recurrence of drought makes agricultural work in Antigua risky; but it must be pointed out that the agricultural practices followed are not such as to conserve the soil moisture. More thorough and early preparation of the land by mechanical ploughing and subsoiling, and the continued use of light implements in the subsequent cultivation, should be more generally adopted. The owners of one group of estates are considering the purchase of mechanical equipment for proper cultivation but, as the cost is relatively high, action is being deferred until conditions are stabilized.

262. It was brought to our attention that in many instances cuttings for planting were obtained from old abandoned fields. It is now generally recognized that this practice is harmful and that only the best plant cane cuttings should be used for this purpose.

263. Irrigation.—The possibility of irrigation was suggested, but was not impressively urged, as there does not appear to be any appreciable reserve of artesian water. A considerable quantity of surface water is now impounded for the Island water-supply.

264. Factories.—There are two central factories in Antigua, both of which were established with the aid of Imperial grants following the report of the Royal Commission of 1896-97. One of these, Gunthorpes, has developed continuously from a factory capable of manufacturing 3,000 tons of sugar per annum to its present normal rating of about 15,000 tons per annum. (In the year 1927 it manufactured over 19,000 tons in an unduly extended milling season, but such extension impairs the preparation of cultivation for the next crop.) This factory can be classed as a well-equipped modern factory obtaining a recovery of sugar from the cane quite up to modern standards.

265. The Bendals factory has a capacity of 3,000 to 3,500 tons of sugar per annum (in 1927 it manufactured 3,490 tons), but is not equipped to obtain the average recovery of sugar required in a modern central factory. Additional machinery has been installed and the quality of the work considerably improved in recent years. The management declared their intention of installing additional equipment to bring the quality of the work up to standard should funds be available.

266. Provided the interests of all growers, both estates and peasants, can be safeguarded, as was done with the original
suppliers of cane to Gunthorpes factory when making the Imperial grant, it would be very advisable to enlarge Gunthorpe's factory so that it could deal within reasonable time with the cane it can now command from a good crop such as that of 1927, and eventually deal with the entire output of Antigua, as we consider that a single factory for the Island would be the most economical arrangement. The existing light railway of the factory could, without great difficulty, be extended so as to link up the areas now served by the two factories and to serve areas not adequately served now.

267. Payment for canes.—Both factories follow the same method of payment for estates' canes as that in force at St. Kitts (Basseterre) central factory (see paragraph 230). For peasants' canes only the first payment of 5½ per cent. is made. Whilst it was claimed by some planters in Antigua, as well as in St. Kitts, that under this system of payment the factory was able to record profits while the payments for canes were not sufficient to meet the cost of growing the canes, it must be noted that in the abnormally bad year 1929 Gunthorpes factory sustained a loss of over £6,000.

268. Shipping facilities.—The same sugar warehouses and molasses storage-tanks in the port of St. John are used by both factories. In the case of Gunthorpes, the factory is connected by railway to the port, whereas Bendals factory has to transport all sugar and molasses by road at higher cost.

269. Credit facilities.—Notwithstanding the very bad year, due to low price and drought, through which the planters of Antigua have just passed, there had, up to the time of our visit, been no serious restriction of credit facilities granted by the Banks in Antigua for the cultivation of the coming crop, although there has been a large carry-over of loans which should have been repaid by the proceeds of the last crop. Unless the cane crop now standing proves exceedingly good, which does not appear probable in some parts of the Island, a continuation of the low prices of 1929 will cause further losses in 1930. With the prices further depressed as they were at 31st December, 1929, to £10 10s. 0d. per ton f.o.b. there will most likely be a serious curtailment of credit facilities making it impossible for some estates to continue in cultivation. In case of the abolition of Imperial preference without any provision to compensate for its loss, cultivation of cane in Antigua would generally cease.

270. Department of Agriculture.—The Federal Department of Agriculture of the Leeward Islands Government has its headquarters in Antigua. This Department supervises the work of the local Agricultural Departments in each Presidency.

271. With the recent revival of the work of the former Imperial Department of Agriculture, through the formation of the Advisory Service attached to the Imperial College of Tropical Agriculture, the need for a Federal Department in the Leeward
Islands disappears, with a possible considerable saving in expense. Through the Advisory Branch of the College and under the supervision of the Imperial Commissioner, the services of expert agriculturist, chemist, and plant pathologist will be available to outline the work of the local departments and prevent overlapping and duplication in all of the British Caribbean group of islands. Under this arrangement the work of the local departments can be improved.

272. We were informed by Mr. Evans, Principal of the Imperial College of Tropical Agriculture (see paragraph 141) that proposals are under consideration which will further improve the organization of the agricultural work in the Leeward Islands.

273. Peasant farming. — The progress of the Island during the past 30 years appears disappointing in connection with the development of direct cultivation of their own lands by the working population. As compared with Barbados and St. Kitts, there is in Antigua a very much larger area of land obviously suitable for peasant settlements and cultivation which is not required and is not suitable for the cultivation of sugar-cane or for other estate cultivation. Writing of the Island of Antigua in 1897, Sir Henry Norman’s Commission explicitly stated that in that Island the Government must, to meet the altered circumstances, take steps to promote the settlement of the labouring population as peasant cultivators. Whilst some progress has been made in this direction, the failure to do what it would appear to anyone familiar with West Indian agricultural conditions might have been done is unhappily conspicuous. So far as we can ascertain, notwithstanding this explicit pronouncement of the Norman Commission, which the present Commission consider to have been absolutely sound and well-founded, no steps whatever were taken by the local Government for many years to set on foot any active policy of this kind. Latterly, several small schemes have been instituted and now greater determination and enterprise are being shown in this direction. The Colonial Government are taking steps to develop by peasant settlement a larger and, in many respects, quite suitable area on the estate known as Piccadilly.

274. It has been unfortunate that, for reasons of economy, in developing these settlements the Agricultural Department was initially made responsible for the collection of the instalments, but this work has now been transferred to the Public Works Department. In some instances, it has been necessary to enforce payment through the Courts; consequently, the advisory officers of the Department were looked upon with suspicion, and their advice not sought.

275. Agricultural Associations. — The Gunthorpes factory has fostered the formation of the Antigua Agricultural Association, an organization of peasant farmers which obtains from that
factory the same terms of payment for canes as the estates. The management of the factory indicated that they were prepared to extend the same facilities to similar organizations in other districts.

275. Economic conditions.—The economic and financial results of the continuance of the present conditions would be much the same as we have indicated in regard to Barbados and St. Kitts. Some of the estates on which cultivation is most expensive and difficult might, like the black soil estates in Barbados, be compelled to reduce cultivation. Indeed, owing to financial difficulties, some are already doing so and reducing employment, and will probably, under present conditions, not replant in 1930 for another crop (1932).

276. Relief recommended.—Conditions in the sugar industry in Antigua are already considerably worse than those in either Barbados or St. Kitts as, in addition to the low prices obtained for canes, the cost per ton of cane has been greatly increased through the low yield per acre consequent on the severe drought. Planters have been compelled to reduce the already very low wages of labourers by 20 per cent. to 30 per cent., and as there is no immediate prospect of improved prices, and as money obtained through the usual commercial channels costs from 8 per cent. to 10 per cent. (one of the Banks which has made advances at 8 per cent. charges the interest on the outstanding balance monthly), it is recommended that a loan of £55,000 be immediately made at the lowest rate of interest possible from Imperial funds for distribution and repayment as outlined in the Agricultural Society Committee’s memorandum.* In this memorandum it is stated that the whole crop cost £105,512 to produce; the return due to sale of canes totals about £50,000, so that the sum of £55,000 would enable planters to receive proportionate loans to cover these losses at an appreciably lower rate of interest. This assistance should be administered through a Bank specially established for the purpose, as was done in Barbados on the foundation of the Imperial grant made on the recommendation of the Commission of 1896-97.

277. Effect on public revenue.—It is part of our duty to consider what would be the results upon the public revenues of a considerable reduction in the selling of sugar from Antigua. Within the present year, the fall in the market value of sugar has already considerably affected, and threatens increasingly to affect, the importing power of the population. The Customs duties and the import duties on rum have already fallen considerably, and a deficit in the finances of the Colony for the current year appears to be almost inevitable. As we have pointed out in regard to St. Kitts-Nevis, in the course of the last 30 years, whilst the populations have considerably decreased,

* See Appendix 5, to be published later.
the public expenditure has nearly doubled, representing a real increase in the burden per head even after allowing for the decline in the value of money. The actual figures in the case of Antigua are—

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1896</td>
<td>36,119</td>
<td>£57,094</td>
</tr>
<tr>
<td>1928</td>
<td>30,442</td>
<td>£98,485</td>
</tr>
</tbody>
</table>

These figures by themselves are sufficiently disquieting. We regard it as unquestionable that, unless the position of the sugar market improves and unless a remunerative price can, by some means, be secured for the sugar industry in Antigua, there will be a very severe and disastrous falling off in the revenues of the Presidency. As compared with Barbados, comparatively little income is received from abroad by persons resident in the Colony, which would tend to maintain the imports. Remittances very roughly estimated to amount to £13,000 a year are made principally by persons who have emigrated to America and prospered there to their kinsfolk in the Island; but very little income is derived from outside the Island by the established white population. On the other hand, very little, if any, profits from Antigua estates are now being drawn in England. The profits of Guntorpes central factory are divided equally between the shareholders, who largely reside in England, and the cane-growers as a final payment in proportion to the quantity of canes supplied by them. This half is returned practically in full to the Island.

278. Concurrently a decline in import duties, a general diminution of business in the community must obviously seriously affect all other sources of revenue whilst making the incidence of the land tax still more onerous than it now is. In case of the collapse of the sugar industry following the abolition of the preference, we see no possibility of avoiding urgent appeals to the Imperial Exchequer for relief of distress as well as for funds to maintain Government services.

279. Export Tax. — With regard to export duties, we have already addressed a special letter to Your Lordship. The position in regard to the current year is that, whereas the export duties on sugar are paid by the factories and are understood to be taken account of in assessing the income tax payable by local planters in so far as they have received profits from the factories, the Guntorpes sugar factory in the current year has suffered a loss and made no supplementary payment to the contributing planters. Apparently, in the next financial year, the export duties will continue to be levied before the produce leaves the wharf, but, in so far as the factory and the majority of the planters are concerned, they are liable to no income tax upon their sugar business, so that they will be paying out in export duties money against which they can have no set-off
on account of their liabilities to income tax. Such a situation aggravates what we have pointed out as in our opinion an indefensible mode of taxation.

280. Emigration.—It appears that the emigration of able-bodied men from Antigua has in the past been principally to Santo Domingo for employment during crop-time; also that there has been considerable emigration to Cuba and, in former years, to the United States of America. The emigration to the United States of America has been checked by the United States Government policy during recent years. Neither Cuba nor Santo Domingo have at the present time any need of further labour supplies. There appears to us to be less necessity for emigration from Antigua than further depression of the sugar industry would create in Barbados or even, under present conditions, in St. Kitts.

4. St. Lucia.

281. When calling at St. Lucia on the 27th of October, 1929, we had a preliminary discussion with the Administrator and the Committee appointed to prepare the evidence for the Commission. We returned on the 9th of November and left on the 11th. We held one public session, at which eight witnesses were examined, and visited the two principal factories and the estates attached to them.

282. The population of St. Lucia is estimated at 56,917. The area is 152,320 acres, of which 85,400 acres are estimated to be cultivable. 22,000 acres are actually under cultivation, including 4,300 acres under sugar-cane.

283. The total number of labourers employed in the sugar industry is stated to be 6,900 (including 900 metayers and contributors).

284. In 1928 the exports of domestic produce were valued at £149,729, of which £66,911, or 45 per cent., consisted of sugar and sugar products. The principal other exports were limes and lime products £29,732, cocoa £27,321, copra £8,690, and other fruits and vegetables £4,420. (For details of sugar and other exports in previous years see Appendix 2.*) The total imports for domestic consumption (i.e., total imports less re-exports) in 1928 were £193,946. It will be observed that the foreign trade of St. Lucia is much less per head than that of the other Colonies we visited, and it may be concluded that, as we understand to be the case, the Island raises most of its own food. The importance of the sugar industry in St. Lucia is, therefore, not as great as the proportion sugar exports bear to the total exports would indicate.

* To be published later.
285. For the year 1928 the revenue was £85,786 and the expenditure £96,372; the estimates for 1929 were £79,348 and £90,734 respectively. The expenditure has for many years regularly exceeded the revenue, and since 1927 the Colony has received an Imperial grant-in-aid amounting to 75 per cent. of the deficit in each year. A loan of £71,979 was raised in 1926 to cover part of the deficit then outstanding, but at 31st December, 1928, there still remained a surplus of liabilities over assets of £8,216, which had increased by November, 1929, to cover part of the deficit then outstanding, but at which sinking funds of £60,670 were held.

286. The value of sugar exported from St. Lucia in 1928 was very little more than the value in 1897—£67,000 in 1928 against £61,000 in 1897—whereas the total value of the Island exports had increased from £81,000 in 1897 to £149,000 in 1928. Sugar is, therefore, now 45 per cent. of the total exports as against 75 per cent. in 1897, so that the trade of the Island is dependent on its sugar exports to a much smaller degree, proportionally, now than then.

287. The greater part of the exported sugar is manufactured in four central factories. These factories, at Roseau, Cul-de-Sac, Vieux Port, and Dennery, were reported on by the Royal Commission of 1897 as “well-equipped factories, turning out a high class of sugar at a minimum loss in crushing and manufacture.” Lists of equipment recently installed in these factories were submitted to the Commission and show that, apart from replacement of worn-out machinery, comparatively little has been done to keep abreast of modern developments and to obtain the recovery of sugar now necessary. It was pointed out that this was in some measure due to frequent changes in ownership. The estates at Dennery have been planted in coconuts and it is intended that they shall go out of cane cultivation.

288. Owing to the shortness of our stay at St. Lucia, the two factories of Roseau and Cul-de-Sac only were visited. These two factories are small, making from 1,000 to 2,000 tons of sugar each annually. They are only about 2½ miles apart, but as each factory is in a valley with a mountain ridge separating them it does not appear practicable to grind all the canes at one factory. Owing to the restricted area in each valley, the crops harvested by each factory cannot be greatly increased. The factories at present grind about 16 hours per day only. Whilst the cost of manufacturing a ton of sugar in these factories compares quite favourably with that of larger factories, owing to low labour costs and certain advantages of soil and climate, in order to produce sugar as economically as others of the West Indian islands it will be necessary to improve the machinery so that a much higher recovery of sugar is obtained and a better quality of sugar produced. No reliable data as to the work done are available, owing to the lack of chemical
control. With small factories such as these the cost of maintaining a full technical staff would be prohibitive. One engineer now supervises both factories, and arrangements have been made to obtain the services of a chemist between both factories during the coming crop.

289. Cost of cultivation.—The cost of cultivation in St. Lucia should compare favourably with that in the other islands as the rainfall is ample, the soil very good, and canes ratoon for long periods. From the figures submitted, it would appear that the cost of weeding is exceptionally high, but it was explained that this was largely due to neglect in previous years owing to change of ownership.

290. Cane varieties.—Owing to the system of long ratooning and the supplying of new plants where old stools have died, the cane-fields of St. Lucia contain a number of varieties mixed together. This probably accounts in some measure for the low average yield of cane per acre—15.4 tons in 1928 (average of an area of about 2,500 acres). Considering the amount of artificial manure used, and the average rainfall in the cane-growing districts, a much higher yield should be obtained. Recently, a number of new cane varieties have been introduced in co-operation with the Agricultural Department, and are now being grown on a fair scale.

291. Ploughing, cultivation, and harvesting.—Owing to the heavy rainfall and the clayey nature of the soil, it has been considered necessary to drain with open drains at very frequent intervals; consequently, ploughing and cultivation by implements is made difficult. The loss of area due to the width of these drains is excessive and is a factor contributing to the low yields per acre. Experiments in spacing the drains at wider intervals are now in progress.

292. Factories.—The general position regarding the factories has already been dealt with. The milling plants are in reasonably good condition and are being improved, but the boiling houses require to be modernized in order to eliminate unnecessary handling and to ensure that all the sugar produced is of 96° polarization and of a quality that can be shipped without deteriorating. Losses have been experienced through the polarization of the sugar going down during shipment. This loss in polarization is caused either by improper methods or inefficient machinery used when separating the sugar from the molasses.

293. Interchange of comparative returns.—With the employment of a chemist it will be possible to prepare comparative returns, and isolated, small factories, such as those of St. Lucia, would profit greatly by a system which brings before them the work being done in larger factories.
294. Shipping facilities.—Each factory ships and sells its own sugar through agents and brokers, and the cost of delivering sugar to the United Kingdom or Canada is reasonable.

295. Peasant farming.—A considerable amount of cane is obtained from peasant farmers, numbering 744 for the four factories. Any falling-off of the sugar industry compelling the closing down of a central factory would inflict hardship on these small growers as sugar-cane is, for the greater part, the only cash-crop they produce. During the past year the price paid to these small growers was 10s. per ton only.

296. Department of Agriculture.—The Department of Agriculture in St. Lucia has devoted most of its work to the establishment and extension of crops other than sugar-cane, such as coconuts, limes, and other fruits.

297. Effects of continuance of present situation.—We were informed that the sugar estates in St. Lucia are already in financial difficulties, partly owing to the high rates of interest charged for financial accommodation. The two principal factories suffered serious deficits in 1929 which necessitated their raising mortgages on their properties. Similar deficits in 1930 were considered inevitable, even at the price-level prevailing in 1929, and it was said to be only a question of time before, if present conditions continue, they must be forced out of existence. The further fall in price since that statement was made must conduce to that probability, and the removal of the preference would precipitate it. As we have noted, one estate is already being converted to coconuts.

298. We have already indicated that the sugar industry is not of such vital importance to St. Lucia as to some of the other West Indian islands which may be said to be almost entirely dependent on it, e.g., Antigua, St. Kitts, and Barbados; and other industries, such as limes, cocoa, coconuts, and a promising beginning in a fruit export trade to Bermuda and Canada, already exist which might be expected to replace sugar in time. It must, however, be remembered that the lime industry is threatened with disease, while the prices obtainable for cocoa and coconuts are not at present encouraging. None of them can employ the same amount of labour per acre as the cultivation of sugar-cane. The rapid extinction of the sugar industry which would result from the abolition of preferences must, therefore, be expected to lead to serious unemployment and distress, at any rate for a considerable period.

299. We were informed, and the Customs returns confirm, that St. Lucia is fortunate in depending to a comparatively small extent on imported food supplies (see table in paragraph 112). No serious difficulty in feeding the population need, therefore, be anticipated, particularly as there exists a considerable area
of land capable of cultivation, but not actually cultivated. It is true that much of this is at present inaccessible, but we understand that a scheme for the construction, with the help of the Colonial Development Fund, of roads to serve part of it has been submitted by the Colonial Government. In the event of a serious failure of the sugar industry this would probably be the best way in which His Majesty's Government could help in the permanent relief of the situation. If this road development is proceeded with and the lands opened up to settlement, St. Lucia might eventually offer a field for settlement of some of the excess population from Barbados.

300. **Effect on public finances.**—As already stated, the Government of St. Lucia has been in financial difficulties for many years and was obliged in 1926 to fund most of its accumulated deficit. It has since 1927 received a grant-in-aid from His Majesty's Government, but as this is fixed at 75 per cent. of the deficit actually realized each year, the remaining 25 per cent. goes to swell the deficit accumulated since 1926. We learned that the difficulties of the sugar industry were already depressing the public revenue and it is clear that the extinction of the industry must result in a serious further decline in the revenue, which would suffer, not only by the complete loss of the present export tax on sugar, but by the inevitable decline in imports and, therefore, in import duties. At the same time, the Government would probably have to take measures for the relief of distress. It is apparent, therefore, that the continuance of the low market conditions of 1929, and, still more so, of its aggravation, must throw an increased burden on His Majesty's Government which, under present arrangements, must meet its share of the inevitably larger deficit in the St. Lucia finances.

301. **Emigration.**—There is at present comparatively little permanent emigration from St. Lucia; nor would it appear necessary to endeavour to promote any (even if there were any outlet available) in the event of the failure of the sugar industry in St. Lucia.

302. There is no reason why, with intelligent handling, on the lines being now pursued by the local Government, the Island should not be made self-supporting, and as prosperous as St. Vincent or Grenada. Some external financial assistance will, however, in the meantime be required.

5. — **St. Vincent.**

303. We paid a brief visit to St. Vincent on the 13th of November, 1929. St. Vincent is one of the group of the Windward Islands, having an area of 133 square miles and a population estimated at 51,000. It was not included in our original itinerary as it is no longer an important sugar-producing Colony. At one time it produced considerable quantities of
sugar, but by the year 1896 the value of the exports of sugar had sunk to £22,000 and the industry was referred to by the Royal Commission of 1896-97 as on the verge of extinction. In fact, the export of sugar itself dwindled gradually away, and by the end of the Great War had practically disappeared. (The exports of sugar for the eight years 1919 to 1926 averaged 38 tons per year.) The exports of molasses and syrup continued to be of some importance, and in the same period averaged £16,120 per annum in value. Arrowroot and Sea Island cotton have taken the place of sugar as the principal staples of the Island; the exports of these products in 1928 being £64,508 and £28,549 respectively, out of the total domestic exports of £155,884.

304. Recently an effort has been made to revive the production of sugar for export, a new factory having been erected for this purpose, and the exports for the last three years were:

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tons.</td>
<td>£</td>
</tr>
<tr>
<td>1927</td>
<td>375</td>
</tr>
<tr>
<td>1928</td>
<td>929</td>
</tr>
<tr>
<td>1929</td>
<td>1,075</td>
</tr>
</tbody>
</table>

305. An application for assistance from the Colonial Development Fund in the complete equipment of this new factory was made to the Government of St. Vincent, and a similar application was made for assistance in the erection of a new factory for the manufacture of syrup (and ultimately of sugar) in another part of the Island. On your instructions, the Governor of the Windward Islands requested us to examine and report upon these applications. We accordingly visited the Island on the 13th of November, when an inspection was made of the existing factory for which assistance was requested, and our report on the two applications was rendered to you in our letter of the 13th of November.

306. Generally, we cannot feel that, under existing conditions of the world market, those West Indian islands which no longer produce export sugar in large quantities should be encouraged to revive the industry. We have expressed this view in the cases of Nevis and Tobago, and we feel that it applies as strongly to St. Vincent, where other crops have successfully been developed in substitution for sugar. On the other hand, if our proposals are accepted and a reasonable price secured to the producer, the completion of the factory already established in St. Vincent and the development of an export trade in sugar would further strengthen the Island's position.

307. The development of other crops and the present comparatively fortunate situation of St. Vincent are largely due to the land settlement schemes successfully carried out there in pursuance of the recommendations of the West India Royal Commission. Opportunity was taken by the Chairman, during
our visit, to view one of the areas settled under the schemes. The desirability of adopting similar schemes elsewhere in the islands is discussed more particularly elsewhere in our Report.

6.—British Guiana.

308. We arrived in British Guiana on the 15th of November, 1929, and left on the 2nd of December. We held six public sessions, at which forty witnesses were examined, and also several informal discussions with the Officer Administering the Government and others. The greater part of our stay was occupied in visits to the estates and factories in all three counties of the Colony, two nights being spent in Suddie, Essequibo, and two in New Amsterdam, Berbice. We visited sixteen of the twenty-one operating factories (covering nearly 90 per cent. of the production), and on four estates inspections of the cane-fields were made by punt or light railway. Visits were also paid to the site of the proposed Government Land Settlement scheme at Bush Lot, and to three rice-mills in Essequibo, and by courtesy of the Colonial Transport Department and the Management of the Demerara Bauxite Company we were enabled to go up the Demerara River as far as Mackenzie City, the centre of the Demerara bauxite-mining industry.

309. The population of British Guiana is estimated to be 307,000. The total area of the Colony is estimated at 57,266,874 acres, but only a narrow strip along the coast and a short distance up the rivers has been developed, the total area under cultivation being 154,868 acres. The area under sugar-cane is 57,625 acres. The number of labourers directly employed in the sugar industry is estimated at 50,000.

310. For the year 1928 the total exports of domestic produce were valued at £3,032,000. Of this £1,805,000, or 60 per cent. consisted of sugar and sugar products. The principal other exports were diamonds £504,000, rice £232,000, bauxite £175,000, copra £73,000, balata £54,000, timber £32,000, and coffee £29,000. (For details of sugar and other exports in previous years see Appendix 2.) The imports for domestic consumption (i.e., total imports less re-exports) amounted to £2,393,000.

311. The revenue for 1928 was £1,185,811 and the expenditure £1,159,138; for 1929 the estimates were £1,148,221 and £1,189,829 respectively. The revenue of the Colony has for several years failed to cover the expenditure, and at 31st December, 1928, there was a deficit of £156,038 in addition to an amount of £1,639,175 advanced pending the raising of a loan. The long-period public debt then amounted to £2,618,424. In

* To be published later.
1929 a sum of £2,000,000 was raised by loan to repay advances from the Crown Agents for the Colonies, but these have now again accumulated to approximately £67,500.

312. Cost of cultivation of cane.—Fairly complete returns were received from seventeen estates representing 80 per cent. of the output of the Colony. These are summarized in the comparative summary of costs in paragraph 119, and indicate that the average cost of growing and harvesting cane in the Colony during 1928 was about 14s. 4½d. per ton. This cost will be slightly lower in 1929, and, if forecasts and estimates are realized, lower still in 1930, but it must be pointed out that these reductions are being made at a sacrifice which may ultimately result in some reduction of yield. The cost of growing cane is fairly uniform throughout the Colony, all lands being about sea-level and requiring an elaborate and expensive system of irrigation and drainage trenches.

313. Cane varieties.—Although the planters are fully alive to the possibilities of different cane varieties, the sugar-crop of British Guiana depends almost entirely on a locally-produced variety, D. 625, which replaced the rich Bourbon variety when it succumbed to root disease. D. 625 yields a good weight of cane per acre (average for 1928, 26.2 tons), but the cane has a comparatively low sucrose content, and a low purity, so that even the best-equipped factories require about 10 tons of cane per ton of sugar. This is, in some measure, due to low recovery in the factories, and will be dealt with under that head. The Department of Agriculture is at work on the propagation of new seedlings in an endeavour to obtain one with a better quality ratio under local conditions, and one estate which raises seedlings has already planted an area of over 400 acres with one of its own seedlings, "Diamond 10," which promises to be an improvement on D. 625. The majority of the estates have small areas planted with other varieties, but up to the present no cane except "Diamond 10" has shown sufficient promise to warrant planting on an extensive scale.

314. Manuring.—All estates report the use of artificial fertilizers—chiefly sulphate of ammonia—in considerable quantities; very little green manuring or pen manuring is done. A form of green manuring which is claimed to give excellent results is practised in some estates. When the last ratoon crop is harvested the drainage ditches are stopped, and water run into, or pumped into, the field from the irrigation canal, until the soil is submerged. The effect of this is to kill off the ordinary weeds and vegetation and promote a vigorous growth of water-plants which die down when the water is drained off. These are then ploughed under. "Flood fallowing" in this manner may also kill off a large proportion of injurious insects. As there appears to be a considerable difference of opinion among planters as to
the value of this treatment, a series of carefully laid out tests on areas of known uniform soil is contemplated, so that the true value of the method may be assessed.

315. Under observations on factory work, reference is made to the poor clarification of juice obtained in the majority of the factories visited. Turbidity of clarified juice, where correct heating and liming are carried out, has been found to be in large measure due to lack of phosphoric acid in the juice, pointing to deficiency of phosphoric acid in the soil. This suggests the use of more phosphatic fertilizers as desirable. At two factories where phosphoric acid was being added continuously to the juice during clarification a brilliantly clear clarified juice was obtained.

316. Livestock.—Work animals are used for hauling cane in punts along the irrigation or "navigation" trenches from field to factory, which is the universal method of transport on British Guiana sugar estates. Mules, imported from the United States of America, are generally used, and are preferred to oxen for the long hauls as they travel considerably quicker. The cost of upkeep of mules is greater than that of oxen, but the higher expense is probably justified by the quicker transport of the canes.

317. Ploughing, cultivation, and harvesting.—The majority of the estates submitting answers to the questionnaire report some form of mechanical cultivation being worked or tested out and the impression gathered when visiting 16 out of the 21 factories with estates attached was that the advantages of mechanical tillage were fully appreciated and that extension depended chiefly on stability in the industry making funds available. The use of mechanical tillage in British Guiana presents many problems peculiar to the country, most of which have been overcome, in many cases by the modification by ingenious methods of equipment used elsewhere. It was reported that the use of cable ploughing and cultivating tackle cost less per acre of land worked than the usual lighter tractors and ploughs. The initial cost of the cable tackle is, however, considerably higher and the estates are unable to purchase under existing conditions.

318. The cultivation of the cane is thoroughly done. This is evidenced by the high yields obtained over a series of years without replanting.

319. In the harvesting of the cane lies the greatest room for improvement. That the need for improvement is recognized in many quarters is evident; that the carrying through of these improvements is difficult was also made abundantly clear. Nevertheless, it may be possible, by close study, efficient organization and co-ordinated effort to considerably improve existing conditions. The practice of burning off the dry cane-leaves prior to cutting is now generally condemned, yet it is almost universally done in the Colony, on account of labour shortage and the
disinclination of labourers to cut unburned cane. Greater attention might be given to organizing the cutting and transporting if burning must be continued so that the time between burning and milling is reduced to a minimum. Burned cane deteriorates rapidly, especially if it is allowed to lie in the field under a tropical sun. No work is done in field or factory on Sunday, Sunday labour being forbidden by Ordnance 17 of 1893; consequently cane burned on Friday night and cut on Saturday may not be ground until late on Monday, or even Tuesday. The result was evident in the average drop in juice purity from Saturday to Monday. That labour is averse to turning out in force on Monday for field work was represented to us. If the extra day off per week of field labour were Saturday, in place of Monday, all cane could be ground in the mills prior to shutting down on Saturday and gangs turned out on Monday morning to get the mill running early.

320. The present practice is to pile cut cane alongside the navigation trench awaiting the arrival of punts. By purchasing a rather more liberal equipment of punts it would be possible to have empty punts lying alongside at all times so that workers "heading out" the canes could drop them in the punts at a considerable saving in labour costs and with much less loss due to cane dropping in the trenches. The saving should cover the cost of additional punts in a year or two.

321. In emphasizing the foregoing observations, we would point out that the sucrose content of the cane and the purity of the juice are both low in British Guiana, and that the methods criticized are conducive to low purities. Similar difficulties have already been overcome by sustained effort in other countries.

322. The labourers on the sugar estates live on the "front lands" of the estates, that is, along the seashore or river front, and as the cane-fields are often many miles inland they must walk along the "dams" which are often muddy and almost impassable and, in many cases, wade waist-deep through irrigation trenches to reach their work, returning the same way in the evening. Two estates have laid down light tram-lines to take the labourers to and from the "back lands," and the management of these estates advised us that they considered the increased efficiency of the labour amply repaid them for the expenditure incurred.

323. Irrigation.—Irrigation by flooding is practised in dry seasons. This is the easiest and least expensive method.

324. Factories.—The factories in British Guiana were divided by the Committee representing the Planters’ Association into two groups, termed A group and B group. The factories in the former group are those of over 5,000 tons per annum capacity and manufacture 75 per cent. of the sugar. The average
over-all recovery of factories in A group was 79.5 per cent. in 1928, which is considerably below the level of what is to-day considered good practice (compare 87.54 in St. Kitts, 87.63 in Antigua, 86.5 in Ste. Madeleine, Trinidad, and 90.44 in an Hawaiian factory milling poor quality cane and requiring 9.8 tons of cane per ton of sugar). The average recovery of factories of the B group which submitted returns was 73 per cent. in 1928. While these low recoveries are in some measure due to the low-purity juices being worked, it must be pointed out that the average boiling-house equipment is far from modern standards. The milling plants are, on the whole, in good condition and of modern construction, but better work would be done by them were the boiling-houses equipped to deal with the juice properly. Reference has already been made to the cloudiness of the clarified juice and methods of improving it. We suggest that the regular recording of the condition of the juice by a turbimeter be made part of the laboratory routine. The sugar crystallizing, curing, conveying, and bagging equipment and methods in practically all the factories can be greatly improved if funds are available.

325. Centralization of factory work and increase of the output of individual factories has progressed since the Report of the Royal Commission of 1897, when 64 factories manufactured practically the same quantity of sugar as is being produced to-day by 21; but further centralization would be profitable, and before any large expenditure is incurred it is very advisable that a survey of conditions be made to ensure that the installation of new machinery is made only at a factory which may normally be expected to obtain sufficient cane to run full time (24 hours daily) either by extension of cultivation or by amalgamation with a neighbouring factory. None of the factories operates a full day continuously at present, and the general practice is to grind 16 or more hours daily with one shift only and a few relief men to give some respite to the workers. The system is bad and men cannot be expected to do efficient work under it. Also, to recover capital and depreciation charges on the large investments in milling machinery, it is very necessary that it should operate 24 hours per day during the comparatively short period of the year when cane is being cut, and also to mill all cane as soon as possible after cutting and at the period of the year when the sucrose content is highest.

326. Some difficulty in arranging for centralization was indicated owing to the refusal of owners of intervening properties to grant way-leave for the easy transport of cane from one estate to another. Obstruction of this nature, when the amalgamation would be for the good of the industry and of the Colony as a whole, should not be allowed to persist and the Government should always be prepared to compel way-leave when it can be shown to be for the general good and to cause
no undue hardship to the landowner. The arrangement of estates and properties is such that intercommunication between estates which are not adjoining is difficult. The majority of estates are long narrow strips from 4 to 7 and 8 miles long from sea or river front to back and ½ to 1 mile wide on the sea or river front, and are cut up by irrigation and drainage trenches between each estate. The population is generally concentrated on or near the highway at the sea or river front.

327. Payment for canes.—In the majority of cases, canes are ground in factories controlled by the same interests as own the estates on which the canes are grown. In some few others cane growers pay a fixed rate per ton to have their canes ground, and obtain the resulting sugar. No comment was made on this and the arrangement appears satisfactory. The method of payment for small farmers' canes is dealt with under "peasant farming" in paragraph 332.

328. Interchange of comparative returns.—The chemical control of the majority of the factories in A group is by no means developed to the degree now considered necessary for the efficient operation of a modern central factory. No uniform system of chemical accounting is followed, and in many cases this is not possible on account of lack of facilities for obtaining correct weights at the various stages of manufacture. During the visit of the Commission it was announced that arrangements were being made to circulate comparative running reports among the factories of the Colony, and if the system adopted is such that the figures are really comparable, obtained by uniform methods of analysis, and made use of by managers and operators alike, the incentive to better work will soon become evident and the industry will benefit as a whole thereby. We have recommended an interchange of returns with other Colonies (see paragraph 131).

329. Shipping facilities.—The cost of shipping sugar from each factory varies according to the distance from Georgetown, and the facilities for obtaining easy movement of the barges to and from the factory. The work is on the whole efficiently handled and no general recommendation can be made.

330. It was brought to our notice that, in the case of four factories near Georgetown which transport part of their supplies over the Government-owned railroad, the Government had indicated that it was not prepared to assist the estates in obtaining way-leave to construct a canal which would considerably reduce the cost of transport as the resulting loss of freight would be serious for the railway. Prior to the acquisition of the railway by the Government this way-leave had been granted, but the work was not proceeded with during the war time. It is not equitable that certain estates should be compelled to pay an undue share of the maintenance of a public utility which should
be a charge on the Colony as a whole; therefore, the freight rates should be such as to be comparable with the cost of the service, including all capital and construction charges, if performed by the shippers themselves. Whether or not this is now the case cannot be determined without exhaustive enquiry.

331. Shippers in Georgetown are handicapped in obtaining the best ocean freight rates owing to the shallowness of the entrance to the port. Shipments are usually limited to 2,000 to 3,000 tons in one bottom.

332. Peasant farming.—Owing to the nature of the land, peasant farming is largely devoted to the growing of rice. Labourers living on some of the estates are loaned or rented small plots of land to grow their own ground provisions, and large quantities of ground provisions are grown by the "villages," old estates which have been cut up and sold to small-holders who live in a village on the front land of the estate.

333. Very little sugar-cane is grown by peasant farmers; in fact, with the exception of the factories to the immediate east of Georgetown, no cane was obtained other than what was produced by the estates themselves. The peasant farmers supplying cane to these estates represented to us that the present system of purchase of cane was not equitable, and that they should be put on the same basis as other estates supplying canes. On the other hand, the factory-owners pointed out that it must be borne in mind that the expense of purchasing cane in small lots from a large number of suppliers is considerably greater than in purchasing a large quantity from a single supplier; also, the large supplier usually contracts to plant a minimum area in cane. In Trinidad the factory-owners estimated their expenses in purchasing small farmers' canes at from 60 cents to 90 cents per ton.

334. So long as the sugar estates are maintained and they continue to pay a reasonable price for peasant canes, there appears reason to hope that cane farming by West Indians may be extended. The following figures of the increase of peasant cane cultivation in one group of villages were given us by a deputation of the Farmers' Association representing this class of cultivators:

<table>
<thead>
<tr>
<th>Year</th>
<th>Tons sugar</th>
<th>Tons cane</th>
</tr>
</thead>
<tbody>
<tr>
<td>1926</td>
<td>62.8</td>
<td>686.8</td>
</tr>
<tr>
<td>1927</td>
<td>212.0</td>
<td>2,332.0</td>
</tr>
<tr>
<td>1928</td>
<td>247.0</td>
<td>2,717.0</td>
</tr>
<tr>
<td>1929</td>
<td>292.0</td>
<td>3,212.0</td>
</tr>
</tbody>
</table>

In the event of it becoming impossible, owing to a collapse of the sugar industry, for this cultivation to be maintained, the position of this class of cultivators would be more difficult than it already is.
335. **Economic position.**—The economic conditions of British Guiana and the degree to which the maintenance of the sugar industry is at present important to it cannot be understood unless the peculiar and unique characteristics of the foundation of the Colony’s agriculture are clearly realized. British Guiana appears on the map as an immense territory, but it is necessary to state at the outset that, whatever imaginative presumptions of possible future development the contemplation of large maps may suggest, the whole of the interior, outside of a belt averaging about 10 miles in width along the coastline, may be left out of account in dealing with its immediate problems of agriculture and maintenance, or those of the future for a considerable number of years. Sufficiently comprehensive surveys of the interior have been made to enable competent and responsible witnesses to assert with confidence that, except in certain areas for the production of cattle, the interior of British Guiana nowhere offers any encouraging prospect for agricultural settlement. It is a disappointment to us to be compelled to record this discouraging judgment; for the report of Sir Daniel Morris, incorporated in that of Sir H. Norman’s Commission of 1897 (Appendix A, pages 91 to 92), had predisposed us to a much more sanguine presumption of the agricultural possibilities and promise of the interior lands of British Guiana and of their suitability for colonization from other islands. It appears to us, however, clear that Sir Daniel Morris’ encouraging report was based upon unverified and over-favourable impressions entertained by his informants. The forests are very extensive and are full of fine timber which, when cut and shipped, is, within limits, marketable in competition with other hardwoods. The increase of this production is proceeding with some encouraging prospects. There is also an irregular and unreliable source of money in the winning of alluvial gold and diamonds, in the beds of some rivers; also of bauxite and possibly some other minerals. These industries, however, afford little or no basis for permanent agriculture and development, and their principal effect upon the agricultural economy of the Colony at the present time is to absorb, if not to divert, labour which might otherwise seek employment in the sugar industry.

336. The whole of the colonized or at present colonizable land of British Guiana, with the exception of a not extensive district in the remote north-west, consists of mud-flats reclaimed from the ocean by embankment and drainage. The sea-defences of this coast are expensive; the interior dykes and the intricate system of irrigation, navigation, and drainage canals which intersect it entail continuous care and expenditure for their upkeep. They were laid out for the creation of sugar estates. They were, for a long time, maintained entirely by the expenditure of sugar estates, and now that sugar-cane has very largely gone out of cultivation their upkeep is being neglected and is becoming a
more expensive charge on public funds, and it is, under present arrangements, impossible to recover from a good deal of the land which has to be dealt with the costs of repairs and improvements. In recognition of this fact, it has been a leading feature of the policy of the Colonial Government, during the last few years, to put the whole scheme of seaward and landward protection, navigation, irrigation, and drainage upon an organized and self-supporting footing, and this we regard as of fundamental importance, not only for the maintenance of the sugar industry, but also for the development of the rice industry and that of any other subsidiary agricultural work, as well as being essential for the improvement of health conditions. Meanwhile, for the large areas still remaining in cane cultivation, such services depend upon the sugar estates and in regard to adjacent areas depend indirectly upon that expenditure. With the extinction of sugar estates there has, fortunately for the Colony, been growing up an exceedingly promising alternative industry in the cultivation of rice; and attention to the organization of this industry is another of the primary purposes of the Colonial Government at the present time. But the cultivation of rice not only is not productive of so much saleable produce per acre as sugar, but it is at present far from being developed sufficiently to have rendered it practicable to place upon it the charge of water conservancy and administration. Nor can it be developed until irrigation and drainage have been put in proper order for the areas where it is taking hold. For the present, therefore, the actual maintenance of the geographical surface of the colonized and cultivable part of British Guiana still depends very largely upon the production of sugar; and this quite independently of the amount of wages distributed or of the revenue received, either directly from the sugar estates or indirectly from them through import and excise duties on commodities bought out of the wages and profits distributed. Continuance of the present depression of the sugar market must, therefore, aggravate the present difficulties, and in the event of sugar estates going out of cultivation following the possible loss of the present Imperial preference, the estates drainage and irrigation systems will be abandoned and the cultivation of the adjoining villages will suffer. The loss in revenue following this collapse would make it extremely difficult for the Colony to proceed with any major scheme of irrigation and drainage.

337. Alternative crops.—By far the most important industry, next to sugar, in British Guiana, is that of rice cultivation, and it may confidently be viewed as susceptible of very extensive and valuable development. According to the returns given us, in 1928 there were 55,560 acres in rice cultivation, producing 61,144 tons of padi, estimated to yield 36,686 tons of cleaned rice; of this, 18,083 tons were exported, leaving for local consumption 18,603 tons.
338. Under present conditions, however, much of the labour engaged in rice production is wastefully employed and methods of harvesting and preparation for market are primitive and inefficient. In recent years there has been considerable progress made in establishing a market for British Guiana rice in the adjacent West Indian Colonies of Trinidad and Barbados. In 1926 British Guiana supplied 75 per cent. of the rice imported by Trinidad and 79 per cent. of the rice imported by Barbados. It was represented, however, that further expansion in these markets was impossible until British Guiana could supply the better grades of rice which are now imported from India and could guarantee a more regular supply. The whole subject of marketing rice, and the extension of the markets to Canada and Jamaica, was under close discussion in the Colony during the period of our stay there. Mr. C. E. Douglas, a rice expert sent by the Empire Marketing Board, was simultaneously on a visit to the Colony for the purpose of reporting upon the question, and special enquiries have recently been made in Canada with regard to that market by Mr. J. S. Dash, Director of Agriculture, who had returned to the Colony in company with a representative of the Canadian rice milling and wholesale industry. We had discussions about rice with all these gentlemen as well as with local producers and dealers.

339. The problem of developing the British Guiana rice industry has to be attacked on several lines. In the first place, the physical conditions of the large area suitable for profitable rice production imperatively need to be dealt with by putting the system of drainage and irrigation in order. This is one of the leading proposals of the present Governor, and we regard it as of fundamental importance. It is impossible to travel along the coast of the Colony without observing the damage that is being done to agricultural land, and the difficulties that are being placed in the way of closer settlement, by the existing conditions in regard to water conservancy.

340. On properly-managed rice-lands in British Guiana the yield of rice is extremely satisfactory, it having been reported to us that yields of from 1 ton to 1 ½ tons per acre were frequently obtained, compared with a yield of about ½ ton per acre in India. The soils and natural conditions are decidedly advantageous and there is no room for question that, properly dealt with, British Guiana can find in her rice industry a very valuable and increasing source of wealth, both in affording to the Indian population, who form half of the working population of the Colony, an immediate and very congenial means of producing their own food supply and also for the production of a surplus which, intelligently handled, ought to command the whole British West Indian import market, and which there is some reason to hope might also find a market in Canada. The cultivation of rice
appears attractive to almost all Indian agricultural labourers.
At present, most of their rice-crop is cultivated by sufferance on
small patches and they are largely under obligation to sell
what grain they produce to the owners of the land they cultivate,
who may or may not have efficient mills for dealing with it;
and over large areas quite suitable for the growing of rice
they have to depend on the rainfall instead of on a controlled
system of irrigation. The marketing has been so far developed
principally by enterprising Indians.

341. The Government and the Agricultural Department are
now, especially after the recent energetic discussions of the
subject, fully alive to the essentials of the situation, which are,
in addition to the provision of irrigation and drainage through
Government assistance, the provision of freehold land on reason­
able terms to rice cultivators, the organization of co-operation
in handling and milling, the rigorous grading and inspection
of rice prior to export, the elimination of unsatisfactory seed, and
the gradual regulation of production and milling so that a re­
stricted number of recognized grades of rice may be available
throughout the year for exportation in bulk. If progress can
be made upon these lines, not only can the value to the cultivators
of the rice which they now produce be enhanced, but the quan­
tity can be largely and rapidly increased, with great advantage
to the economic position and public revenue of the Colony.

342. As we have already indicated, neither immediately nor
in the near future do we consider it possible that rice should take
the place of sugar production as the leading agricultural industry
of the Colony, but there appears to us a strong probability that,
properly handled, it may, in the course of time, become actually
the more important both as a source of maintenance to the
Indian population and as a staple of export. The realization
of this expectation will, however, benefit the East Indian popula­
tion of the Colony more than the West Indian population, to
whom rice-growing is not a traditional national industry and
whose preferences in regard to agriculture lie rather in the direc­
tion of the growing of vegetables and fruit. Already, however, we
were informed, a considerable number of West Indian cultivators
are engaging in rice production, and we have no doubt that, if
the physical and economic conditions of the industry were im­
proved by the methods now under consideration, an increasingly
greater proportion of West Indian small cultivators would engage
in it.

343. The position and prospects of the West Indian population
of British Guiana appear to us, both in the event of a failure
of the sugar industry and even under a continuance of present
conditions, to be less hopeful than those of the East Indian
population. We can entertain no sanguine expectation of the
early development of any saleable crop founded upon their present agriculture, such as is offered to the East Indians in rice cultivation. We encountered, indeed, a large amount of confident generalization that cotton or bananas could be produced profitably. As regards cotton, it must, we fear be recognized as convincingly demonstrated that this idea is wholly fallacious and that there is no prospect whatever of any advantage to the Colony in the encouragement of the cultivation of cotton of whatever variety. An export trade in bananas could only be established under contemporary conditions by means of the operation of large capitalist concerns which can invest money in the cultivation of areas sufficient to load ships from the outset and can command the services of suitably fitted ships to carry the fruit when grown. So far no such corporation (although the United Fruit Company and others have prospected most parts of the Caribbean Sea and the adjacent coasts for suitable locations for such enterprises) has considered it likely that banana-growing would pay in British Guiana. Among other considerations, it may be mentioned that the Panama disease of bananas, which has proved so ruinous to Central American plantations and which is only held at bay in Jamaica by constant vigilance and expense, entirely destroyed banana cultivation in Surinam, the next-door neighbour to British Guiana, and that the conditions for its development are presumably especially favourable in that part of the continent.

344. The interior of the Colony, back of the present strip of cultivation, is consistently reported by ecological investigators as unsuitable in its soils for extensive agricultural development. The exportation of bauxite deposits for conversion into aluminium is at present a limited industry. The forest industry of balata-collecting is not of a character productive of genuine settlement and colonization, nor are diamond-digging and gold-mining. The two latter industries contribute nothing towards the settled colonization of a territory unless that territory has of itself advantageous agricultural qualities. They produce a certain amount of temporary squatting and residence of small cultivators, who may supply provisions to mining camps, but most of such provisions and supplies is always furnished by the direct transport of imported food through Georgetown. If there were convenient access by road to the interior of the Colony there would, it seems probable, be a certain infiltration and increase of permanent settlement along the rivers, on whose banks there is generally a narrow deposit of silt suitable for West Indian agriculture; but the Director of Agriculture and the Conservator of Forests insisted very emphatically that the amount of such soils available was extremely restricted. These lands and the industries in connection with which they are now, to a certain extent, occupied do not afford any basis for general colonization.
even by natives of the Colony, still less for exploitation by natives of other islands imported in large numbers; although the opinion was expressed to us that, if these interior regions were more accessible, there might be, as there is already, a certain amount of gradual settlement by migrants from Barbados or elsewhere.

345. So long as the general prosperity of the Colony can be maintained through the preservation of the sugar industry and increased by the extension of the rice industry and the fitful or continuous development of mineral resources, there will always be a demand for the marketable foodstuffs which the West Indian cultivator can, under suitable circumstances, produce. As we have already indicated, the West Indian cultivators do at present supply most of such foodstuffs, except rice, locally produced and consumed. They do this under great difficulties and disadvantages, both through the imperfection of the drainage and irrigation system and through the location of the lands which alone are available for them to cultivate; lying mainly at the back-end of the estates on the coastal belt, many miles from their homes, accessible only by boat and often impassable pathways and not suited at present for residential settlement. This question of providing the West Indian population of the Colony with practicable and accessible lands for their cultivation is one, in our opinion, of pressing importance. We think it essential that the Government should pay much more attention to the development of the West Indian cultivators' industry on the same lines as it is now proposing to pay attention to the development of the East Indian rice industry. Only on the basis of such attention, and by means of arrangements for the provision of freehold lands in situations accessible or rendered accessible by suitable roads, can the productivity of the West Indian small farmers' industry be increased, and in the course of such increase it may become apparent that saleable crops for export can be increased and improved so as to take advantage of the facilities for transport of fruit and vegetables which are given by the improved Canadian service, from which some of the smaller islands, such as St. Vincent, Dominica, and St. Lucia, are already expecting to profit.

346. Effects of continuance of present situation.—British Guiana is, even at present, owing to the failure of profits in sugar production, suffering from very serious depression of trade. One estate was being abandoned after the 1929 crop and in the case of others it was difficult to see how they could carry on even at 1929 prices. There is a considerable amount of unemployment among general labourers, and little circulation of money through the shops. Many trading establishments have been compelled to dismiss employees. There have been recurring
deficits in the public finances of the Colony, as shown by the following table:

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue</th>
<th>Expenditure</th>
<th>Surplus (+) or Deficit (-)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1921</td>
<td>4,650,945</td>
<td>5,740,281</td>
<td>- 1,089,336</td>
</tr>
<tr>
<td>1922</td>
<td>4,842,218</td>
<td>5,269,364</td>
<td>- 427,144</td>
</tr>
<tr>
<td>1923</td>
<td>5,560,581</td>
<td>5,191,628</td>
<td>+ 368,953</td>
</tr>
<tr>
<td>1924</td>
<td>5,066,943</td>
<td>5,114,193</td>
<td>- 44,250</td>
</tr>
<tr>
<td>1925</td>
<td>5,298,766</td>
<td>5,406,690</td>
<td>- 107,924</td>
</tr>
<tr>
<td>1926</td>
<td>4,785,811</td>
<td>5,652,758</td>
<td>- 866,947</td>
</tr>
<tr>
<td>1927</td>
<td>4,979,948</td>
<td>5,510,535</td>
<td>- 530,587</td>
</tr>
<tr>
<td>1928</td>
<td>5,393,111</td>
<td>5,563,866</td>
<td>- 170,755</td>
</tr>
</tbody>
</table>

| Total | $39,884,313 | $43,429,315 | - $3,545,002 |

Severe retrenchment had already been found imperative in 1929; the estimates were reduced by $400,000 and a further saving of $300,000 was expected to be effected. Further cuts of expenditure were contemplated in the estimates for 1930. If the sugar industry should collapse, as it must do if the preference is removed, and the wages that can now be earned by the large East Indian population be consequently withdrawn, there would be an immediate demand for repatriation of Indians; and the extent of the liability of the Colonial Government for the cost of this probable demand is estimated at about £800,000. This liability, concurrently with the diminished yield of revenue, due to the failure of wages for the majority of the rest of the labouring class, would be entirely beyond the means of the Colony to meet.

347. With regard to the possibilities of providing the food required for the maintenance of the population, there need be less apprehension in British Guiana than in the Colonies we had previously visited. The soil is productive and we were assured that there would be little difficulty in either West Indians or East Indians providing by their own labour for their maintenance in this respect. Great quantities of ground provisions are grown, and the East Indians would be only too pleased to grow rice. They already possess a considerable number of cattle, sheep, and goats. The provision of foodstuffs would, however, leave the population in considerable straits for means to purchase clothing and other requisites, as there has been comparatively little development of minor local domestic or export industries.

7. — Trinidad.

348. We called at Trinidad on the 14th of November, 1929, on our way to British Guiana, and had a preliminary discussion with the Officer Administering the Government and the Committee who had been appointed to prepare the evidence for the
Commission. We returned from British Guiana on the 3rd of December and left Trinidad on the 14th of December. We held four public sessions, at which twenty-five witnesses were examined. As in British Guiana, much of our time was occupied in visits to the sugar-producing areas of the Island, three nights being spent in San Fernando to cover the estates in the south. Eight of the twelve operating factories, including all of any considerable size, were visited, and inspections were made of the cane-fields on five estates. A visit was also made to the oil-fields and pitch lake and opportunity taken to discuss the possibility of employment of labour, should it be displaced from the sugar-fields. In addition, two days during our stay in Trinidad were spent in visits to the Imperial College of Tropical Agriculture (see paragraph 141).

349. The population of Trinidad is estimated at 397,000. The area is 1,267,236 acres, of which 314,086 acres are actually under cultivation, including 32,874 acres under sugar-cane.

350. The total number of labourers directly employed in the sugar industry or occupied in cane-farming is estimated at 40,000.

351. In 1928 the total exports of Trinidad were £6,686,455, of which £6,184,464 were exports of domestic produce. Exports of sugar and sugar products were £1,230,547, or 20 per cent. Other exports included oil, £2,493,290; asphalt, £402,564; cocoa, £1,651,179; and copra, £227,555. (For details of sugar and other exports in previous years see Appendix 2.) The imports for domestic consumption (i.e., total imports less re-exports) in 1928 were £4,620,201.

352. For the year 1928 the revenue was £1,764,404 and the expenditure £1,538,083; the estimates for 1929 were £1,801,597 (revised estimate) and £1,637,246 respectively. The revenues of the Colony have for some years past exceeded the expenditure and at 31st December, 1928, the excess of assets over liabilities was £664,026, of which £250,000 was set aside as reserved surplus. The long-period debt outstanding at 31st December, 1928, was £5,217,605, against which sinking funds valued at £810,158 were held.

353. Cost of cultivation of cane (see statement paragraph 119).—Very complete returns were made by all the larger estates of the cost of cultivation of cane and were submitted by the Committee representing the Trinidad Chamber of Commerce and the Trinidad Sugar Planters' Association. These returns cover, in some cases, the year 1928, in others 1929. It should be noted that these two years are considered normal years, and that in years when there is any considerable loss due to froghopper infestation the yields per acre will be reduced with a proportionate increase in the cost per ton of cane.

354. Cane varieties.—The standard varieties of cane cultivated in Trinidad are B.H.(10).12, Uba and B.156. A large number

* To be published later.
of other varieties, including some of the new P.O.J. varieties, are being cultivated on small areas on most of the estates and are being closely observed so that the planting of varieties which show promise under Trinidad conditions may be extended.

355. Manuring.—The general practice in Trinidad is to make heavy applications (15 tons to 25 tons per acre) of pen manure before planting, and in some cases to apply artificial fertilizers to the ratoon crops. Extensive experiments have been undertaken by the various estates with a view to determining the optimum quantities of fertilizer ingredients required by the various types of soils. In the proper laying out and control of these experiments valuable assistance has recently been given to the estate-owners by the staff of the Imperial College of Tropical Agriculture, and with their continued co-operation reliable data should soon be available. A detailed survey of soil conditions, conducted by the Froghopper Investigation Committee, indicates that the lime content of the soil in many districts is very low and that applications of from 5 tons to 20 tons of ground limestone per acre will be necessary to neutralize the acidity of the soil. It has been found that the ravages of the froghopper pest are greatly reduced in neutral or slightly alkaline soils. The cost of large applications such as these is so great that they cannot be undertaken under present conditions.

356. Livestock.—The cost of maintaining livestock in the case of estates is a heavy charge in the cost of cane production and is similar to that of Barbados, St. Kitts, and Antigua, and the comments made regarding this cost in Barbados would apply equally in Trinidad.

357. Ploughing, cultivation and harvesting.—During the dry season a large amount of mechanical and implemental ploughing and cultivation is practised. Cable ploughs and tractors are generally used. Owing to the clayey nature of the soil, it is found impracticable to use power implements in the wet season, and hand cultivation must be resorted to.

358. The harvesting of estates' cane is well organized. The cane is brought in small carts to a central point, where it is transferred by a derrick to railway cars for transport to the factory. The harvesting of the cane-farmers' canes is conducted in a similar manner, and whilst some progress in organization has been made by agreement between the factories as to the areas from which each factory draws its cane, making payment on a uniform scale, a great deal of loss of time to the small farmers occurs at the scales owing to the lack of organization in carting and delivering farmers' canes. For example, one hundred farmers may be delivering one hundred tons daily to one scale at an average rate of one ton each per day. Each farmer employs his own cart; consequently, 100 carts are employed in work which is done on the estates by twenty carts. Some organization among the farmers to eliminate this waste is very desirable.
Irrigation.—The normal rainfall is usually sufficient for the crops; therefore, little attention has been given to the question of irrigation. At Caroni Estate, experiments have been tried out in dry seasons with promising results.

Factories.—Of the twelve factories operating in Trinidad, we visited eight, which manufacture about 90 per cent. of the sugar. Four of the factories, producing about 63,000 tons of the crop of about 90,000 tons, may be classed as fairly well-equipped and obtain an average over-all recovery of about 85.4 per cent. The cost of manufacture of sugar based on the cost of estates’ canes averaging about £12 per ton. This cost is reduced in practice on account of the large proportion of farmers’ canes which are ground.

The average over-all recovery of five of the other eight factories (three did not make returns) is 73 per cent., and their cost of manufacture, based on estates’ canes, is £13 17s. per ton. As most of these factories make yellow crystal sugar for direct consumption, they obtain a rather higher sale-price per ton than factories manufacturing grey crystals for refining. The market for yellow crystals is very limited, and it is not advisable to increase the output of this class of sugar considerably.

The four factories classified as fairly well-equipped have done much within the past ten years to improve the standard of work by the installation of modern machinery and control methods. Centralization has been profitably developed in the south of the Island where the Usine Ste. Madeleine manufactured 32,000 tons of sugar in 1929 at a cost of £11 6s. 8d. per ton f.o.b., which is considerably below the average cost. Before making large investments in machinery to bring the other factories up to modern standards, careful study should be made of the possibilities of enlarging the better-equipped factories and thereby centralizing the industry in a similar manner in the northern portion of the Island.

Payment for canes.—Each factory has a number of weighing-scales situated at loading stations on their own or the Government railway lines, and farmers’ canes are purchased by weight at the scale, the price paid being 5 per cent. of the price of 1 ton of sugar f.o.b. for each ton of canes. Throughout Trinidad there are certain agreed reductions to cover the cost of transport of canes, the packing and selling of sugar, etc. There is also a mutually agreed minimum price of 12s. per ton which has been observed by the factories, but which will have to be reduced in case of serious decrease in price of sugar due to the loss of Imperial preference. To the amount paid for farmers’ canes there must be added expenses of from 60 cents to 90 cents per ton of cane incurred by the factory in granting credit facilities, superintending cultivation to secure advances made, weighing and loading canes, and a proportion of the office accounting
expenses. The basis for the price paid is the average sale-price of West Indian sugars in Canada and the United Kingdom, as advised by Messrs. Czarnikow and Company in London.

364. Some complaints were made regarding the limitation of areas by the factories preventing competition for the purchase of farmers' canes, but when the problems of crop advances to farmers and the harvesting of canes from about 18,000 individuals are considered, it is evident that this measure has resulted in reduced costs, both to the factory and to the farmer.

365. Isolated cases of dishonesty of cane-weighers were brought to our attention, but no remedy was put forward which would make this impossible except at great increase in expense. Where credit societies had been formed the trouble is overcome by the combined action of the farmers themselves.

366. Dissatisfaction in some few cases with the basis price for computation of the purchase price is chiefly due to lack of understanding of the method of fixing this price.

367. **Interchange of comparative returns.**—The need for closer co-operation and interchange of ideas among the technical staffs of the factories is evident. In place of each factory staff working as an individual unit, all should be co-operating for the betterment of the industry as a whole. Trinidad is particularly well situated to lead in work of this sort. In addition to having a number of competent men on the factory staffs, the Principal and staff of the Imperial College of Tropical Agriculture at St. Augustine have indicated their willingness and desire to further progress along these lines. A large part of the success of the Ste. Madeleine factory in reducing costs and improving efficiency is due to the keenness of the staff, which is encouraged by interchange of comparative returns with factories under the same organization in St. Kitts, Antigua, and Jamaica.

368. **Shipping facilities.**—Part of the sugar exported is brought to Port of Spain by rail, and transferred by lighters to ocean-going steamers in the harbour. The expense of lightering will be saved when the proposed harbour development scheme is carried through, with railway connection to the docks. A like saving will be possible when ships can come alongside a dock and discharge supplies for the factories directly to railroad cars.

369. **Credit facilities.**—The financing of the large sugar estates is conducted through their offices in London or Port of Spain, and there is no evidence of restriction of credit facilities for ordinary crop cultivation and factory operation.

370. Cane-farmers are financed by the estates either directly or through their agricultural credit societies. Whilst there is undoubtedly some limitation of the amount of credit being extended as compared with previous years, there was no evidence presented of the loans made during the last crop not being recovered to a normal extent when the crop was harvested.
Abolition of the preference with a corresponding drop in price would result in an immediate restriction of credit facilities to the estates, with a resulting inability on their part to finance any farmers who might try to continue cultivation.

Peasant farming.—In 1929 there were over 18,000 cane-farmers in Trinidad, supplying 48.5 per cent. of the canes ground in the factories. The average amount supplied by each farmer is 22 tons, but about half of the farmers supply lots of 5 tons or under; only 4 per cent. supply lots of 50 tons and over. The general policy of the factory-owners is to encourage the production of farmers’ canes.

Alternative crops.—Unlike the other Colonies previously visited, Trinidad has a number of alternative export crops. In fact, the value of cocoa exported considerably exceeds that of sugar. Other exportable crops are coconuts, citrus fruits, coffee, and rubber. Several efforts have been made to plant these alternative crops on areas devoted to cane cultivation, with, in most cases, unfavourable results. Many areas which were planted in cocoa, and proved unremunerative, are again planted with sugar-cane. One large estate whose owners were anxious to abandon sugar cultivation has had large areas planted successively in cocoa, limes, and coconuts. All these have proved unsatisfactory, and attention is again concentrated on the cane crop.

Some of the low-lying cane-lands might be developed for rice cultivation, but by far the greater portion of existing cane-land is unsuitable for any crop other than cane.

The Island depends unduly upon imported foodstuffs, the purchasing power for which is largely furnished by estate wages and the proceeds of cane-farming. The Acting Director of Agriculture computes that the East Indian population depend for 80 per cent. of their food upon imported foodstuffs, and that approximately the same is true with regard to West Indians. The situation in this respect is not much more satisfactory than it is in Barbados, and the causes appear to be similar, namely, that insufficient attention has been given to the development of small-holders’ productive agriculture for local food-supply. There is less excuse for this in Trinidad than in Barbados seeing that there are many small land-holders and that it has been the ostensible policy of the Colonial Government to increase their numbers by the sale of Crown lands. We shall discuss this topic further (see para. 379 infra).

Economic position.—Trinidad produces upon a visitor, especially after a tour through the Lesser Antilles and British Guiana, a pleasing impression of general prosperity. Nevertheless, the economic effect on the Colony of a suspension or any considerable reduction of the sugar industry would unquestionably be very serious, more especially in view of the present
dependence of the Island on imported food, as already noted. As regards alternative developments of the resources of the Island, we shall make some observations in Part IV of our Report.

377. The financial position of the Government is, as above reported, apparently satisfactory, but the liability for expenditure on repatriation of Indians in the event of a failure of employment on sugar estates or in cane-farming is very disquieting. In a recent report by a Committee upon this subject it is estimated that 12,960, or 30 per cent., of the Indians entitled to repatriation will, even under present conditions, elect to return, at a cost of £24,000 per annum for 15 years, independent of a cost of administration of about £2,000 per annum, a total expenditure of about £390,000. If the sugar industry should fail with the removing of the livelihood of the greater portion of these people, it is obvious that a much larger percentage would elect to return to India, thereby increasing the cost to the Colony.

378. In view of the generally satisfactory aspect in other respects of the Colony's economic situation (notwithstanding the present depression in price of cocoa and coconuts), it was difficult for the Treasurer to give us any estimate of the extent by which general revenue might be affected by the collapse of the sugar industry. That officer, however, expressed the opinion that the effect on the revenue of the Colony would be so serious that the Government would be forced either to curtail essential development works or to again place British goods on the general tariff so as to make good the loss of revenue due to the preference voluntarily extended to Great Britain by Trinidad on the conclusion of the Canada-West Indies Trade Agreement.

379. Emigration and land settlement.—We have mentioned that, under present conditions, Trinidad would apparently offer the most promising field for labourers unable to maintain themselves in Barbados or the other islands which they now leave in great numbers seeking employment elsewhere. The Commissioners of 1897 expressed a like opinion, and advised that "special and well-considered arrangements should be made for facilitating the settlement of the creole and East Indian population as peasant proprietors on the Crown lands and on any other suitable lands that might be or might become available."

380. They recommended that a systematic policy should be adopted, deprecating any system under which persons would be allowed to settle by themselves in remote parts without roads or other good means of communication with the rest of the Colony or with a market for their surplus produce. They advised that the minimum limit for grants of Crown land in Trinidad which had recently been raised to 10 acres should be reduced.
381. Since that date a great deal of Crown land in Trinidad has been sold out to small settlers, but there appears to be a great deal more available, though not yet accessible, while much is at present withheld from alienation under agreement with the oil companies who have options over it pending the completion of the surveys now being made to ascertain possible oil-bearing strata. Whilst much of the Crown land already sold to small purchasers has been advantageously settled, the manner in which the settlement of a good deal of it had been permitted appeared to us to have been deficient in system and unsatisfactory. Complaints, which in one district we were able to verify by our own inspection, were made to us that a great deal of land had been sold to small purchasers under the promise or expectation that it would be made accessible by roads over which produce could be brought out, but that roads had not been made. We took some pains to ascertain the facts of the situation, but found much difficulty in doing so in consequence of the inability of any of the public officers available as witnesses during our visit to give us full and precise information upon the subject. This difficulty was enhanced by the fact that at the time of our visit all the principal administrative offices of the Colony, except that of the Treasurer, who, when we held our earlier sittings, was ill, were filled by acting officers, most of them themselves new to the Colony.

382. On one important point as to the financial arrangements available for dealing with these roads, we were, in fact, misinformed. Had well-informed witnesses been available we might have received a better impression of the method in which the explicit recommendations of the Commissioners of 1897 have been carried out. We should, perhaps, under the circumstances, say no more than that we could get no satisfactory evidence that a well-considered system exists, whilst we received a good deal of evidence that persons are allowed to settle themselves in remote parts without roads or other good means of communication with the rest of the Colony, or with a market for their surplus produce. The value of peasant settlement, which ought to be a source of wealth to the Colony, is neutralized or thrown away by such lack of system.

383. It should be pointed out that land settlement in Trinidad must of necessity take some time for extension, and in case of a collapse of the sugar industry it would not be possible to provide for the very large number of labourers who would be thrown out of work and prevent demands for repatriation by the East Indians. It appears from the latest report of the Sub-Intendent of Crown Lands that the full purchase price of Crown land has to be paid in advance. We think that, in the case of small-holdings, payment by instalment should be allowed; and it
appears to us that in other respects also the process of acquiring such holdings might perhaps be made somewhat less obstructive.

384. Tobago.—We received several memorials from Tobago with regard to conditions in that Island, supported by the Member for Tobago in the Legislative Council, and a delegate on behalf of the memorialists had an interview with the Chairman in support of the representations made. The difficulties that are making themselves felt in Tobago are closely similar to those on which we have reported in writing of Nevis; though Tobago is in better circumstances, more attention having been paid there to the extension of peasant settlement and to the organization of marketing produce, which finds a ready sale in Trinidad. Some sugar, molasses, and rum are still produced in Tobago for local consumption, as in Nevis, and the memorialists desired that steps might be taken to safeguard the maintenance of the industry.

385. With regard to the fruit, cocoa, and provision growing industries, it was complained that the steamer communication promised to Tobago when it was made a ward of Trinidad was not being maintained as it should be. It was also asked that the road into the Crown lands might be improved. These complaints we regard as matters to be dealt with by the Trinidad Government. With regard to the marketing trade, we have pointed out that Trinidad depends very largely on imported food, paid for by estate wages. Should the Trinidad sugar-estates fail, Tobago food-growers will lose part, at least, of their market. But the most urgent plea of the memorialists was for facilities to become owners of land. The *metayer* system of cultivation, both for cane-farming and other cultivation, still largely prevails in the Island, and under it, as in Nevis, the position of the cultivators is insecure and unprofitable. We recommend that in Tobago, as in Nevis, measures should be taken by the Colonial Government to supersede this objectionable form of land tenure and to substitute small freeholds.

8. Jamaica.

386. We arrived in Jamaica on the 23rd of December, 1929, and left on the 8th of January, 1930. We held three public sessions (at Kingston, Montego Bay, and May Pen) at which fifteen witnesses were examined. In addition, we had private discussions with the Governor and other officers of the Government, and attended a meeting of the Board of Management of the Jamaica Agricultural Society. Between the 27th of December and the 3rd of January we made a complete tour of the Island, spending one night in Port Antonio, three in Montego Bay, and two in Mandeville, and visiting eighteen factories and estates in all the principal sugar-producing areas. We paid a
further visit to the former cane-growing areas of Clarendon on the 7th of January. Several visits were paid to the Government Agricultural Station at Hope Gardens.

387. The population of Jamaica is estimated at 974,742. Its area is 2,848,160 acres (4,450 square miles). Of this 1,157,586 acres are returned as under care and cultivation, but only 270,240 acres are under tillage. The total area under sugar-cane is 43,605 acres.

388. The number of labourers dependent on the sugar industry may be estimated at 30,000, forming, with their dependents, one-tenth of the population.

389. The total exports of domestic produce in 1928 were valued at £4,143,151, the value of exports of sugar products being £789,000 (sugar £710,000 and rum £79,000) or 19 per cent. The principal other exports were bananas, £1,774,000; coffee, £378,000; pimento, £284,000; coconuts and copra, £234,000; logwood extracts and dyewoods, £175,000; cocoa, £110,000; and citrus fruits, £79,000. (For details of exports of sugar and other exports in previous years, see Appendix 2.*) The imports for domestic consumption (i.e., total imports less re-exports) in 1928 were valued at £6,322,493.

390. For the year ended 31st March, 1929, the revenue was £2,212,852 and the expenditure £2,317,432. The estimates for 1929-30 are £2,192,403 and £2,294,095 respectively. On the 31st March, 1929, the surplus of assets over liabilities amounted to £315,030; the long-period public debt was £5,505,520, against which sinking funds of £2,513,655 were held.

391. Returns were submitted in reply to the Commission’s questionnaire by 22 factories, 20 of which produced 39,048 tons of sugar in 1928 (two do not state the quantity manufactured), but, of these, 11 only, representing an output of 30,867 tons of sugar, were in sufficient detail to enable comparative costs to be obtained, and six only were in a position to supply full data to enable a comparison of the quality of the factory work to be made. In some cases, where costs of manufacture of grocery sugar for the local market only were given, they have not been included in the average costs of manufacture of sugar.

392. Cost of cultivation of cane. (See comparative statement in paragraph 119).—Very few reliable data were available on the cost of cultivation in Jamaica, for a variety of reasons. Some of the larger factories had just changed hands and the records of earlier years had been destroyed; at others, the present owners had recently brought new lands into cultivation at high cost and consequently did not consider these figures representative of normal costs, and on the smaller estates where a variety of products are grown it was impossible to separate the cost of cane cultivation from that of bananas and other crops.

* To be published later.
Cane varieties.—On the failure of White Transparent cane, due to mosaic disease, some years ago, rapid progress was made in introducing immune and resistant varieties. Most of these were introduced by the Department of Agriculture, and are now well distributed over the Island. The varieties chiefly grown at present are B.H.10(12), Uba and White Transparent in about equal areas and a lesser area of Ba.11569. Smaller areas of S.C.12/4 and E.K.28 have been planted and a large number of P.O.J.2725 and 2727 seedlings have been distributed. P.O.J.2878 is now in quarantine at the Department of Agriculture Station at Hope and will be released shortly. Whilst everywhere we had evidence that the necessity of obtaining new canes to produce a higher yield per acre has of recent years been fully appreciated and all are experimenting with new varieties, we had no evidence of systematic tests to obtain accurate comparative figures. The cane-growers themselves have no organization to foster or carry out this work, and the Department of Agriculture, owing to lack of funds, must at present limit its work to the distribution of seedlings.

We think it would be of advantage to the Island that means should be provided to enable the Department to carry on work of this kind. Land for the purpose should be chosen in a suitable situation (Hope Gardens not being suitable) and the co-operation of planters obtained for experiments.

Manuring.—A considerable amount of pen manuring is done in Jamaica, either by carting the manure to the fields or by putting the cattle in pens on the field. Little or no green manuring is done, and, although applications of artificial fertilizer are generally made, we consider that systematic work should be undertaken along modern lines to determine which fertilizer constituents are most necessary in the various districts, and the effect of these on the yield of both plant and ratoon canes.

Livestock.—Cattle and mules are used for hauling cane from field to factory and the cost of upkeep appears to be moderate in most instances. Few of the estates could properly separate their costs in this respect.

Ploughing, cultivation, and harvesting.—No general statement can be made regarding these operations in Jamaica. Practice varies very widely from the dry lands of Trelawny, where the cane is ratooned perpetually, and little or no ploughing is possible, to the lands in St. James and Vere, where cable-drawn ploughs are now being used. The soil in Jamaica is rich and fertile and with proper cultivation of suitable varieties of cane we were told of yields of from 35 to 60 tons of cane per acre. One estate averaged 36 tons per acre over its whole cultivation. When this yield is compared with the average yield from the complete returns submitted of 21.2 tons of cane per acre, it is
evident that great improvement can be made. We learned from the management of estates at both ends of the Island how, by close attention to cultivation, the yield per acre had been very considerably increased in recent years, and we are of opinion that similar increases can be obtained in other parts. These increases are obtained for comparatively little additional cost of cultivation per acre and therefore reduce the cost per ton of cane considerably.

398. As harvesting was not generally in progress during our visit, it is impossible for us to deal with this operation very fully, but as far as we could learn the work is carried out in a methodical and economical manner at the larger factories; in fact, we saw one factory in Vere at work where power hoists were being used to transfer the cane from the carts to the railway-cars and from the railway-cars to the carrier. At other factories in St. Thomas, St. Ann, and Trelawny we saw the equipment used for the purpose, but in Westmoreland, where we saw six factories operating, the methods of harvesting were very wasteful of labour. The canes, when cut, were tied in bundles of ten, then fourteen bundles were assembled in the field in a "heap" and the labourers were paid by the "heap." The bundles are carted to the factory and there untied by hand before being placed in the cane-carrier. It was represented to us that the labourers insisted on retaining this system. It is only because an excessive supply of very cheap labour is available that the factory-owners can continue to manufacture sugar under such conditions. Similar conditions existed at one time in other parishes, but the system has been changed to a more efficient and rational one. When cultivation has been neglected and canes are small, it is natural that cutters should distrust payment by weight cut.

399. Irrigation.—In recent years a number of surface wells (30 to 40 feet deep) have been sunk in areas that used to be devoted to cane to provide irrigation water for bananas. Deeper borings for artesian wells (about 200 feet) are also being developed, and the general use of irrigation water is being discussed and is likely to extend in the cane-growing areas. Rainfall conditions vary greatly throughout the Island, but most districts would profit by having water available for irrigation during the dry season. It is doubtful, however, whether the increase in cane-yield would pay a return on the capital required for irrigation projects if the water can be used only for three or four months annually, and we believe that in many cases better cultivation and mulching of the soil would enable the cane to come through these dry seasons without serious loss.

400. Factories.—There are five or six factories which are fully equipped with crushing plants of 11 rollers or more, and with complete boiling-house equipment, but of these only one records an over-all recovery above 85 per cent.; another records
82 per cent. and the remainder, where such a figure has been ascertained and reported to us, range from 72 per cent. downwards. On account of their large output of high-quality rum many of the factories do not attempt to recover a maximum amount of sugar from the juice, being content to pass high-purity molasses to the distillery and ferment the sugar, obtaining a high return of rum. In fact, in the case of some of the small factories, rum becomes as important a product as sugar. Along the north shore of the Island where cane is grown on comparatively small areas this system works out very well, but as the market for rum is decreasing it would not be practicable for the larger factory with greater output to operate in a similar manner. Consequently, greater attention should be, and in one or two instances is being, paid to obtaining a maximum recovery of sugar, especially where the factory is equipped to do so. In any case, some effort should be made to improve the milling work, as low recovery at the mills is not compensated for by improved return of rum, the sugar not recovered passing immediately to the furnaces in the bagasse.

401. Good factories are now established in St. Thomas-in-the-East and in St. Mary, but there is not at present a supply of cane available to permit of running them at anything approaching full capacity owing to bananas having been extensively planted in the contributory areas. In St. Catherine one large well-equipped factory (Bernard Lodge), which formerly made from 7,000 to 9,000 tons of sugar, may not operate during the 1931 crop, as all the surrounding estates have been planted with bananas by the recent purchasers of the factory. In Clarendon the crop which was previously harvested in three factories, Morelands, Amity Hall, and Monymusk, is all to be harvested in the latter factory by the new owners of these estates. It is hoped, by operating this one factory to its maximum capacity for a longer season, to reduce the cost of manufacture.

402. In Westmoreland there are seven small factories each making small quantities of sugar, the total being slightly over 10,000 tons. The efficiency in these factories is low, and, as is the case with field work, an abundant supply of cheap labour is being wastefully used. We learned that various proposals have been made for the erection of a central factory to serve this area; but on account of the individualism of proprietors and the complications of liens on properties resulting from speculative transfers, no progress has been made. Whilst we recognize that sugar is now being produced cheaply in this area, we must point out that this cheap production is largely due to the supply of poorly-paid labour and that the establishing of the industry on a central factory basis would increase the efficiency and raise the standard of living throughout the parish. It was represented to us, both by the estate-owners and the Director of Agriculture, that no other crop can take the place
of cane in Westmoreland; therefore, if the industry is to survive, we recommend the establishment of a modern central factory on a co-operative basis by the estate-owners and mortgagees, and consider it a suitable project for assistance by the Jamaica Government from its own resources or with the help of the Colonial Development Fund. To safeguard the large investment necessary, it would be necessary to obtain contracts providing for the planting of a minimum area in cane by the contributory estates over a period of, at least, 15 to 20 years.

403. An important factor which at present prevents factories in Jamaica, as in some other parts of the West Indies, from attaining the highest standard of efficiency, is the custom of labourers to abstain from work on estates on Saturday and Monday. Consequently, it is necessary to cut large excesses of cane on Thursday and Friday to keep the factories running six days a week, with unavoidable loss of sucrose due to inversion, or to shut the factory down on Monday and part of Tuesday. We believe this problem should be actively tackled, as is being done by at least one of the larger factories, as maximum efficiency cannot be attained until it is solved. The necessity for taking this long week-end interval for their own business and cultivation does not apply to all labourers; and reasonable persuasion, based on the essential conditions for maintaining modern sugar production, might enable arrangements to be made with others for an adequate shift-system.

404. Payment for canes.—Owing to the banana having proved to be a very paying crop in Jamaica, there is, at present, very little cane-planting by small growers, and owing to the low prices which can be paid for canes the amount of cane grown in districts which are suited for cane-growing only has been steadily falling. The usual basis for payment is, as in other islands, 5 per cent. of the selling price of sugar. In one case, in which sugar was being produced for the local market, we were told that 6 per cent. and 6½ per cent. were paid.

405. Interchange of comparative returns.—The benefits which would accrue from a better spirit of co-operation, and even rivalry, following a system of exchange of data by the factories, would be very marked in Jamaica. It would not be sufficient to arrange an exchange between Jamaican factories only as there is very little appreciation in the Island of what standards are attained under the best operating conditions. Exchange of returns should be arranged with the other West Indian islands and British Guiana. As we have already pointed out, only two factories record a recovery in excess of 80 per cent. and at one of these, where 85 per cent. is recorded, the standard is set by the exchange of comparative returns with factories in St. Kitts, Antigua, and Trinidad under the same management.

406. Shipping facilities.—The larger factories have arranged for the shipment of their sugar in economical manner, but the
small factories, owing to lack of transportation facilities, cannot hope to do so well as there is difficulty in obtaining low rates on the comparatively small parcels to be handled. The establishment of a central factory in Westmoreland would solve this problem for the estates in that district.

407. Credit facilities.—The larger estates in Jamaica receive credit facilities from the Banks in the usual manner and there was no complaint of restriction of planting due to inability to obtain funds. The small cane-farmer has inadequate facilities for obtaining advances or credit. Agricultural Loan Banks have been established, but, owing to the general planting of bananas, which yield throughout the whole year and therefore keep the cultivator supplied with funds continuously, there has been no great demand for crop loans and the activities of the Bank have been rather devoted to making advances for the purchase of estates to be broken up or of small parcels of land. In some cases, complaint was made by small farmers that funds for crop loans were not available, and we suggest that the Agricultural Banks, which are supervised by Government, might extend their activities in this direction, which was the primary object of their formation.

408. Small-holders’ farming.—The growing of cane by small landholders in Jamaica has fallen off greatly in recent years owing to the banana replacing cane on account of the low price paid for canes. In districts unsuited to bananas canes are still planted, but there is a great deal of dissatisfaction at the price the factories are able to pay. In one district (Mid-Clarendon) we learned that the diminution of planters’ canes from 16,000 tons to 4,000 tons annually was mainly due to recurrent droughts following a disastrous fire some years ago. Government assisted the farmers with a loan from the Calamity Fund, but, owing to low prices and poor crops, they have been unable to repay this loan.

409. If the sugar industry is to be retained in Jamaica, it is very advisable that the growing of cane by small farmers should be encouraged, as the present tendency of all small-holders to grow bananas only would place large communities in a precarious position in the case of a bad hurricane, or a rapid increase in the incidence of Panama disease of bananas. In Mid-Clarendon a comprehensive irrigation scheme is now receiving the consideration of Government. This scheme, if adopted, will benefit a large number of small growers.

410. Alternative crops.—As has already been pointed out, the banana has largely replaced cane in Jamaica, and in a number of districts coconuts have also been extensively planted. In other districts where canes were once grown, it has been found impossible to replace them with other crops, and the land has reverted to pasture and bush. A large portion of the area now
planted in cane is unsuited to other crops, and in the case of failure of the sugar industry would probably be abandoned and revert to bush. The effects would be specially felt in Trelawny, Westmoreland, and Middle and Lower Clarendon, and severe distress would be caused in those districts.

411. Department of Agriculture.—The Department of Agriculture has assisted the sugar industry, notably in recent years when the prevalence of mosaic disease was discovered, by the introduction of new disease-resistant varieties of cane. These varieties have been quarantined at the Hope Gardens Experiment Station, and cuttings distributed in large numbers to all parts of the Island. Attempts made to propagate new seedlings by crossing the local White Transparent cane with hardy varieties have been unsuccessful at Hope, and the Director of Agriculture now proposes that a new station should be established in a district where this work might prove fruitful, and we advise that this should be done. The Department has also succeeded, by research into the flavouring constituents of Jamaica rum, in enabling distillers methodically to produce the special qualities of powerfully aromatic rum—formerly known as "German" rums. These remarkable rums have long been used in Europe for flavouring, by blending with diluted pure alcohol. The market for rums of this class has always been limited, and it is obvious that the more powerful the flavouring the less quantity of them may be required for this commercial process. Whilst, therefore, these rums command high prices, their market is generally limited by contracts and standing orders, and their increased production cannot supply the place of that of ordinary sugar and common potable Jamaica rum.

412. During our visits to the estates and factories we were accompanied by, and received great assistance from, Mr. Cousins, the Director of Agriculture.

413. Economic position.—Apart from the considerations of the immediate loss of income, salaries, and wages which the depression or extinction of the production of sugar in Jamaica for export would inflict upon large numbers (estimated by the Governor at 100,000) of the inhabitants, with corresponding failure of the market for home produce or British imports, it was forcibly urged by the witnesses who appeared before us that the notable and increasing prosperity which the Island has of recent years been enjoying through the development of the banana trade is actually bringing it into a precarious economic position. The extent to which banana planting has not only, with great advantage, taken up large new areas of land, but has also been superseding the cultivation of former staples of export, is very conspicuous; and, having regard to the liability of the banana crop to destruction by hurricanes and the threat to its maintenance in the increase of the Panama disease, we could not but
share the impression that the situation is becoming increasingly
dangerous and that it is important that, at least in those districts
which are not suitable for banana growing and which are suitable
for sugar-cane cultivation, serious and resolute attention should
be given and promoted by further aid and encouragement, not
only to maintaining the sugar industry, but to rendering it more
profitable and more attractive, and if possible increasing its out-
put. Whilst, therefore, it might conceivably be suggested that,
looking at the resources of Jamaica as a whole, the Island would
be to-day as well-off without the sugar industry as it was twenty
years ago with it, we should consider this view fallacious; and
we share the opinion expressed by witnesses that its maintenance
and prosperity are comparatively even more important now than
they may have been formerly. The Island Government has
itself taken this view and the Legislature has provided, by a
Law having effect for one year, for the payment of a subsidy of
£2 a ton on all refining sugar exported and the allocation pro rata
to output of the sales of sugar for consumption in
Jamaica at a price much above the British preferential price.
This measure has been adopted with the considered intention of
helping the sugar industry to survive under present conditions
(including British tariff preference) until the whole position of
the British Colonial sugar industry can be comprehensively
dealt with by His Majesty’s Government, so as to maintain it
effectively in the future. This temporary assistance would, of
course, be of no avail if the present position should be seriously
worsened by the early repeal of the British sugar duties without
substitution of some such permanent or interim measures as we
have suggested. The fact that Jamaica is, fortunately, at the
moment, economically and financially in a position, as no other
West Indian Colony is, to help itself in this manner, does not
lessen the general importance of this aspect of its economic
position as a reason for the adoption of such general measures
providing for the interests of Jamaica as well as of other British
sugar-producing Colonies.

9.—Note on Fiji and Mauritius.

414. We were appointed as a Commission to investigate the
position of the West Indian sugar industry and our recom-
mendations have been framed with a view to ensuring the
survival of the industry in the West Indian Colonies. It is,
however, clear from such information as we possess regarding
the position in the other British sugar-producing Colonies, Fiji
and Mauritius, that they are fundamentally in a very similar
position to that of the West Indies, and assistance is equally
necessary for them if the industry is to survive in them. We
have already indicated in Part I of our Report that the policy
of His Majesty’s Government must take into account the whole
Colonial sugar industry.
415. Fiji.—The production of sugar in Fiji is in a favourable year about 100,000 tons, and sugar forms about 60 per cent. of the exports of the Colony. Mr. F. C. T. Lord, a representative of the Colonial Sugar Refining Company, which controls the manufacture of sugar in Fiji, was sent to meet us in the West Indies. He furnished us with very full information regarding the Fiji sugar industry and we had several private discussions with him. Mr. Lord’s principal memorandum is reproduced in Appendix 10,* and shows that the position in Fiji is very similar to that in the West Indies. His statements as to the importance of the industry to Fiji and the probable effects (including reduction of wages and labour disorders) of its extinction or serious contraction have, we understand, been confirmed by the Governor of Fiji in a recent telegram to Your Lordship, in which he estimates that the revenue would decline by 50 per cent., while the Government might have to meet a liability of £500,000 (nearly one year’s revenue) for the repatriation of East Indians.

416. Mauritius.—The production of sugar in Mauritius averages about 230,000 tons per year and the exports form 97 per cent. of the domestic exports of the Colony, which is accordingly practically wholly dependent on the sugar industry. The position of the industry was already serious last year in consequence of the world depression and the reduced preference received in the United Kingdom upon Mauritius white sugar, and as a result of representations from the Colony, Sir Francis Watts, K.C.M.G., D.Sc., was appointed as a Commissioner to enquire into the general position of the industry in Mauritius. We understand that his general conclusions and recommendations have now been received by Your Lordship.

10.—Concluding Observations.

417. In the course of our investigations various representations or complaints were brought before us relating to matters which did not come within the scope of our enquiry and some of which appeared to be deserving of attention. In a few instances we brought these matters to the notice of the Governments concerned and they will, no doubt, take such action with regard to them as may be desirable.

418. From the various Governors and Administrators and the other officers of the Colonial Governments with whom we came into contact, we received the most cordial assistance. We have already expressed our appreciation of the response made by the Governments to our requests for information. We should like also to express our appreciation of the services, in many cases very considerable, of those officers in the various

* To be published later.
Colonies who arranged our programmes and visits. We were also assisted by the local sugar-producing and commercial communities, both in the furnishing of information in response to our enquiries and in the facilitating of our personal visits to the factories and estates.

419. As we have already stated, we are indebted to Messrs. Elders and Fyffes for diverting the s.s. "Carare" in order to transport us from St. Kitts to Antigua, and to the Canadian National Steamships for altering the schedule of one of their steamers to enable us to visit Nevis and arrive earlier in St. Kitts. We are also indebted to the officers of the various ships of those lines upon which we sailed, as also to those of the "Ascania" (Cunard), for the improvisation of office accommodation which enabled us to do a considerable part of our work on the voyages between the various Islands.

420. In our brief visit to Cuba we were greatly assisted by the facilities extended to us by the Cuban Government and the United Railways of Havana. In our observations on Cuba we have expressed our indebtedness to the various Companies who enabled us to visit their factories, including the Royal Bank of Canada. We are also indebted to the local Managers of the Royal Bank in Martinique and in Guadeloupe for the arrangements of visits to the sugar estates and factories in those Islands during our brief calls there on route from Antigua to St. Lucia.

421. We received very kindly assistance and hospitality from H.M. Minister resident at Havana, who facilitated our studies of present conditions there by valuable introductions.

422. We desire also to acknowledge the great value of the services and assistance rendered to us in every part of our work, as well as in the arrangements for our journey by our Secretary, Mr. Sydney Caine of the Colonial Office. His able and energetic co-operation has been of the greatest value to us in the efficient conduct of our task. Miss E. J. Titchener, who was assigned to us by your Lordships' Department as stenographer and typist also rendered us indispensable service, and her technical proficiency and goodwill alone enabled us to keep the materials for our Report up to date in the course of our voyage and to complete it on board ship for presentation at the earliest possible date.

We have, etc.,

OLIVIER.
D. M. SEMPLE.

February, 1930.
SUMMARY OF RECOMMENDATIONS.

Various recommendations and suggestions for action by local Governments and sugar planters and manufacturers are made in the course of our detailed observations on individual Colonies. The following are only the more important general measures and those involving action by His Majesty’s Government.

A.—GENERAL ASSISTANCE OF THE INDUSTRY BY HIS MAJESTY’S GOVERNMENT. (See paragraphs 28 to 63.)

1. His Majesty’s Government should make a resolute endeavour to eliminate, in concert with other Powers, the disturbing factors of high tariffs and subsidies. (Para. 44.)

2. Meanwhile, a single purchasing agency should be set up to purchase all sugar for the United Kingdom, buying Imperial sugar at £15 per ton c.i.f., and other sugar at the market price. (Paras. 49 to 51.)

3. By way of an immediate moratorium the British preference on Imperial sugar should be raised as quickly as possible to 4s. 8d. per cwt. (Para. 53.)

4. Pending the conclusion of an international agreement as in 1, or the establishment of a single purchasing agency as in 2, the duty on sugar should not be reduced below 4s. 8d., under which tariff Imperial sugar would be admitted free provided the total price obtained does not exceed £15. (Para 54.)

As a condition of the assistance recommended, the Colonial Governments should take effective action to prevent the sale of foreign sugar at less than the f.o.b. price of Imperial sugar. (Para. 60.)

B.—OTHER GENERAL MEASURES.

1. The establishment of alternative industries should be encouraged wherever possibilities exist; e.g., rice in British Guiana and fruit trade in the Leeward Islands. (Paras 65 and 66; see also sections on individual Colonies in Part III.)

2. Peasant settlement and co-operation among peasants should be developed as much as possible, as the most effective way of establishing the economic structure of the West Indian Colonies on a secure basis.

3. Labourers’ houses upon estates should be improved and greater attention should be paid by Colonial Governments to sanitary conditions generally, and to the provision of facilities of access for labourers to their work on estates and to their own provision grounds.

4. A West Indian Sugar Technologists’ Association should be formed, possibly with assistance from public funds. (Paras. 130 to 132.)
C.—Assistance by His Majesty's Government to Particular Colonies.

1. Barbados.—Reconstruction of the railway terminus should be undertaken and is recommended for assistance from the Colonial Development Fund. (Para. 191.)

2. Antigua.—A loan of £55,000 should be promptly made by His Majesty's Government at the lowest rate of interest possible, to enable loans to be made to planters to cover losses during 1929; an Agricultural Bank should be established to administer the loans as was done in Barbados following the Report of the Royal Commission of 1896/7. (Para. 276.)

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