

1881.
NEW ZEALAND.

COLONIAL INDUSTRIES AND TARIFF COMMITTEE

(FINAL REPORT OF, TOGETHER WITH MINUTES OF PROCEEDINGS AND EVIDENCE).

Brought up 5th September, 1881, and ordered to be printed.

ORDERS OF REFERENCE.

Extracts from the Journals of the House of Representatives.

THURSDAY, THE 7TH DAY OF JULY, 1881.

Ordered, "That a Committee be appointed to consider how, by arrangement of the tariff or otherwise, manufactures and industries may be encouraged. The Committee to consist of the Hon. Major Atkinson, Captain Colbeck, Mr. Ballance, Mr. Hutchison, Mr. Landon, Mr. Macandrew, Mr. Wright, Mr. Wakefield, and the Mover, with power to call for persons and papers, and to report in a month; three to be a quorum."—(*Mr. Murray.*)

TUESDAY, the 2ND DAY OF AUGUST, 1881.

Ordered, "That the Colonial Industries Committee have leave to postpone the bringing up of their report for fourteen days."—(*Mr. Murray.*)

TUESDAY, THE 16TH DAY OF AUGUST, 1881.

Ordered, "That the report of the Colonial Industries and Tariff Committee upon subject of olive-culture be referred back to the Committee for further consideration."

INTERIM REPORT.

No. 348.—PETITION of WILLIAM CROWTHER.

Your Committee, having considered the petition of Mr. William Crowther, cab-proprietor, of Auckland, asking for remission of duty on cabs and carriages imported into the colony, see no reason to recommend the remission of the duty.

WM. ARCHIBALD MURRAY,
Chairman.

FINAL REPORT.

WITH the limited time and opportunities at the disposal of your Committee for an exhaustive investigation of the numerous and important subjects which their inquiries opened up, your Committee decided to consider only such questions of public interest as it appeared likely they could deal with during the present session of Parliament, and have the honor herewith to submit the report of the resolutions to which they agreed from time to time, upon the various subjects as stated:—

Maize (Duty upon).—Your Committee recommend that, with the exception of imports from Fiji, the same duty should be imposed upon maize as is imposed upon other cereals.

Tobacco (Culture and Manufacture of).—That in order to encourage the growth and manufacture of tobacco in New Zealand, your Committee recommend that the duty on tobacco grown within the colony should be reduced to 1s. per lb., for a period of not less than five years.

Olive Culture.—That the proposed Department of Science and Industries should, with the view to the establishment of olive-culture, import by plants, seeds, or truncheons, as may be found best, the most suitable varieties of the olive-tree, for distribution by the department, upon such terms and in such parts of the colony as the department shall consider best. And that, as an inducement to the planting of olive-trees, twice the amount of land should be given for each acre planted in olive-trees as is granted under the laws and regulations for the encouragement of the planting of forest trees.

Kauri Gum.—That, in the opinion of your Committee, the practice of leasing considerable areas of kauri-gum lands to individuals, with the exclusive right to dig for gum, should forthwith be discontinued, and that licenses to dig gum on Crown lands should be issued to the people engaged in that industry upon payment of a reasonable fee, under a similar system to that which prevails on gold fields; and your Committee would further recommend that the Minister of Lands do take the necessary steps to give immediate effect to the foregoing proposals.

Sorghum-sugar Production.—That the Government should, as soon as possible, import sorghum seed for distribution, and should also import the machinery required for the manufacture of sugar from sorghum, the cost of which your Committee has in evidence will not exceed £70; that a bonus of

£10 per ton should be offered for sugar produced from sorghum grown in the colony before the 31st December, 1887. The bonus to be payable from time to time to any person producing quantities of five tons and upwards. That when bonuses have been paid upon an aggregate of 200 tons no further bonuses should be paid.

Cotton-growing.—Your Committee recommend that a bonus should be offered, with a view to ascertain the price at which cotton can be grown, and the suitability of the soil and climate of the northern parts of the colony for its production.

Preserved Fruits, Jams, and Jellies.—That with a view to encourage the manufacture of preserved fruits, jams, &c., your Committee recommend that the duty upon imported jams, jellies, and preserves should be increased by one halfpenny per pound.

Distillation.—That, in the opinion of your Committee, it is expedient in the interest of agricultural industry that distillation of spirits should be resumed in New Zealand, and that there should be a differential duty of 6s. per gallon in favour of the colonial manufacture. Such differential duty to continue for, say, five years.

Rape- and Linseed-oil.—Your Committee recommend that a bonus of 1s. per gallon should be offered for all rape- or linseed-oil manufactured before the 31st December, 1887, by machinery permanently established in the colony, from linseed or rape-seed grown in the colony. The bonus to be payable from time to time to any person producing quantities of 1,000 gallons and upwards. That when bonuses have been paid upon an aggregate of 100,000 gallons no further bonuses should be paid.

Remission and imposition of Duties.—That, in addition to the recommendation made with reference to changes in the tariff, your Committee is of opinion that the following changes should be made:—To remit the duty on nitric acid, alum, borax; and to impose a duty of 1d. per pound on bacon and hams.

Compilation of Pamphlet.—Your Committee recommend the selection from, and printing in pamphlet form, the papers read before the South Australian Chamber of Manufactures, the letter of the Commissioner of Agriculture, United States, and such other information as has been obtained in evidence, especially that of Sir George Grey on the subject of the cultivation of the olive and manufacture of olive-oil; also the cultivation of sorghum and manufacture of sorghum-sugar; the methods adopted in the drying and preservation of fruit; and also any practical suggestions for the cultivation of tobacco; and that the proposed Department of Science and Industries be charged with this duty.

Manufacture of Farina.—Your Committee are of opinion that the manufacture of farina in New Zealand holds out great advantages to agricultural enterprise, and only requires a commencement to become an extensive and important industry; and, with this view, they recommend that a bonus should be offered of such amount, and on such terms and conditions, as the Government may deem most likely to secure the object arrived at.

Department of Science and Industries.—While recognizing the value of the labours of the Royal Commission of 1880 to encourage colonial industries, your Committee, to avoid waste of power by desultory investigation, and to secure continuous and systematic efforts to bring science and industries to bear with success in utilizing the native products of New Zealand, and in the introduction of such native products and manufactures from other countries as are likely to be advantageously and successfully acclimatized and established in the colony, would recommend—That with a view to the extension of the practical usefulness of the Geological Department, the name should be changed to that of the Department of Science and Industries, and the department should be charged with the duty of collecting information, and reporting to the Government from time to time, on the best means of establishing and encouraging the agricultural, mining, and manufacturing industries of the colony; and that the Government be requested to place on the estimates the sum of £1,000 towards giving effect to the above resolution; and, further, that the Government should assist local associations formed in various localities throughout the colony to act in concert with the said Department of Science and Industries in the collection and diffusion of useful information as to how the efforts of the Government and the energies of the people might be most beneficially directed to the further development of the existing, and the creation of new, sources of wealth and means of industrial progress and national prosperity.

WM. ARCHIBALD MURRAY,

Chairman.

5th September, 1881.

MINUTES OF PROCEEDINGS.

WEDNESDAY, 13TH JULY, 1881.

The Committee met pursuant to notice.

Present: Hon. Major Atkinson, Mr. Murray, and Mr. Wright.

The order of reference of 7th July was read.

On the motion of Mr. Wright, *Resolved*, That Mr. Murray be appointed Chairman.

The Committee then adjourned.

TUESDAY, 19TH JULY, 1881.

Present: Captain Colbeck, Mr. Hutchison, Mr. Lundon, Mr. Macandrew, Mr. Murray (Chairman), and Mr. Wright.

The minutes of the previous meeting were read and confirmed.

A letter was read from Messrs. Bardsley and Son, Dunedin, asking for modification of duty on certain articles used in the manufacture of candles, soap, &c. After being discussed, further consideration was postponed till a future meeting.

Mr. Volbracht attended, producing samples of locally grown tobacco, and putting in a statement in reference to same.

The subject being discussed, Mr. Wright gave notice that he would, at next meeting, move the following motion—namely, That in order to encourage the growth and manufacture of tobacco in New Zealand, the duty on tobacco grown within the colony should be reduced to 1s. per lb. for a period of not less than five years.

On the motion of Mr. Macandrew, *Resolved*, That a copy of Mr. Wright's resolution be sent to each member of the Committee, and that the same be considered at next meeting.

The Committee then adjourned.

TUESDAY, 26TH JULY, 1881.

The Committee met pursuant to notice.

Present: Hon. Major Atkinson, Captain Colbeck, Mr. Lundon, Mr. Macandrew, Mr. Murray (Chairman), Mr. Wakefield, and Mr. Wright.

The minutes of the previous meeting were read and confirmed.

The question of duty on maize was considered.

On the motion of Mr. Macandrew, *Resolved*, That the Committee, having considered the question of the imposition of the duty upon maize, recommend that with the exception of imports from Fiji the same duty should be imposed upon maize as is imposed upon other cereals.

Mr. Wright's motion, of which notice was given at last meeting, was next considered.

On the motion of Mr. Wright, *Resolved*, That, in order to encourage the growth and manufacture of tobacco in New Zealand, the duty upon tobacco grown within the colony should be reduced to 1s. per lb. for a period of not less than five years.

The Committee then adjourned.

WEDNESDAY, 27TH JULY, 1881.

The Committee met pursuant to notice.

Present: Hon. Major Atkinson, Captain Colbeck, Mr. Hutchison, Mr. Lundon, Mr. Macandrew, and Mr. Murray (Chairman).

The minutes of the previous meeting were read and confirmed.

Mr. Samuel Kirkpatrick, from Nelson, made a statement in reference to rebate of duty on sugar used in preserving fruits, or increase of import duty upon preserved fruits.

Mr. W Swanson, M.H.R., attended and made a statement in reference to the import duty on kauri gum varnish, and mixed paints. Letter on this subject, from Messrs. Atkinson and Co., Freeman's Bay, Auckland, handed in and read. Mr. Swanson also handed in letters from Joseph Burgess, relative to a proposed increased import duty on laundry blue; and from Mason Brothers, Auckland, relative to the manufacture of perfumery. He also made statements relating to the local manufacture of twine and shoemakers' wooden lasts.

The Committee then adjourned till 10 a.m., 28th.

THURSDAY, 28TH JULY, 1881.

Present: Mr. Macandrew, Mr. Murray (Chairman).

There being no quorum the meeting lapsed.

FRIDAY, 29TH JULY, 1881.

Present: Captain Colbeck, Mr. Lundon, and Mr. Murray (Chairman)

The minutes of the previous meeting were read and confirmed.

A written statement by Mr. Kirkpatrick, of Nelson, was put in and read. After considerable discussion thereon, the meeting adjourned till Tuesday, the 2nd proximo, at 10 a.m.

TUESDAY, 2ND AUGUST, 1881.

The Committee met pursuant to notice.

Present: Captain Colbeck, Mr. Hutchison, Mr. Macandrew, Mr. Murray (Chairman), and Mr. Wright.

A suggestion made by Captain Colbeck, as to the advisability of introducing the olive-tree, was considered.

Moved by Mr. Macandrew, and seconded by Captain Colbeck, That Mr. N Reid, of Messrs. Turnbull and Co., be summoned for to-morrow at 10 o'clock.—Carried.

Mr. Swanson was present, and showed samples of ropes and twine manufactured in Auckland.

The Committee adjourned until 10 o'clock on Wednesday, the 3rd instant.

WEDNESDAY, 3RD AUGUST, 1881.

The Committee met pursuant to notice.

Present: Major Atkinson, Mr. Ballance, Captain Colbeck, Mr. Lundon, Mr. Macandrew, and Mr. Murray (Chairman).

The minutes of the previous meeting were read and confirmed.

Mr. Reid was in attendance, and made suggestions relative to modifying the tariff, which he promised to commit to writing.

Mr. Macandrew gave notice that he would, at a future meeting, move the following motion—viz., That, in the opinion of this Committee, it is expedient, in the interest of agricultural industry, that distillation of spirits should be resumed in New Zealand, and that there shall be a differential duty of shillings per gallon in favour of the colonial manufacture.

Mr. Landon handed in a statement of the exports of kauri gum from June, 1856, to 1871, which was read and discussed. Thereupon, Captain Colbeck gave notice that he would, at a future meeting, move the following motion—viz., That, in the opinion of this Committee, the kauri gum fields owned by the Crown should not in the future be leased to any one person, as has been the practice in the past, but that licenses to dig gum should be issued to gum-diggers (on the payment of a fee), on the same principle as is now in force for gold-mining purposes; and that the Minister of Lands be requested to instruct the various Land Boards to co-operate, in order to carry out this proposal.

This being all the business, the Committee adjourned *sine die*.

TUESDAY, 9TH AUGUST, 1881.

The Committee met pursuant to notice.

Present: Captain Colbeck, Mr. Landon, Mr. Macandrew, and Mr. Murray (Chairman).

The minutes of the previous meeting were read and confirmed.

Petition No. 270, signed by seventy-two Maoris, praying for the imposition of duty on maize imported from Fiji and other islands, was read and discussed. Whereupon Captain Colbeck moved the following resolution: "That having already reported upon the matter of the import duty upon maize, the Committee press upon the House the necessity to give effect to that report."—Carried.

Captain Colbeck's motion, notice of which was given at last meeting, was next considered.

On motion of Captain Colbeck, *Resolved*, That the original motion, "That, in the opinion of this Committee, the kauri gum gold fields owned by the Crown should not in the future be leased to any one person, as has been the practice in the past, but that licenses to dig gum should be issued to gum-diggers (on the payment of a fee) on the same principle as is now in force for gold-mining purposes; and that the Minister of Lands be requested to instruct the various Land Boards to co-operate in order to carry out this proposal," should be altered to the following: "That, in the opinion of this Committee, the practice of leasing considerable areas of kauri gum lands to individuals, with the exclusive right to dig for gum, should forthwith be discontinued, and that licenses to dig gum on Crown lands should be issued to the people engaged in that industry upon payment of a reasonable fee, under a similar system to that which prevails on gold fields. The Committee would further recommend that the Minister of Lands do take the necessary steps to give immediate effect to the foregoing proposal."—Carried.

The clerk was instructed to write to Dr. Hector, requesting him to furnish the Committee with particulars as to the acclimatization and growth of the olive.

The Committee then adjourned.

THURSDAY, 11TH AUGUST, 1881.

The Committee met pursuant to notice.

Present: Mr. Ballance, Captain Colbeck, Mr. Hutchison, Mr. Landon, Mr. Macandrew, Mr. Murray (Chairman), and Mr. Wright.

The minutes of the previous meeting were read and confirmed.

A letter from Mr. Robertson, dyer, of Nelson, relative to the manufacture of woollen yarns, &c., was read, and ordered to be considered at a future meeting.

On the motion of Mr. Macandrew, *Resolved*, That Dr. Hector be summoned to give evidence, on Monday, the 14th instant, at 10 o'clock a.m.

Mr. Ballance gave notice that he would, at the next meeting, move the following—namely, That with a view to the extension of the practical usefulness of the Geological Department, the name should be changed to that of the Department of Science and Industries; and that the department should be charged with the duty of collecting information, and reporting to the Government from time to time, on the best means of establishing and encouraging the mining and various industries of the colony.

This being all the business, the Committee adjourned till Monday, the 15th instant, at 10 a.m.

MONDAY, 15TH AUGUST, 1881.

The Committee met pursuant to notice.

Present: Hon. Major Atkinson, Mr. Ballance, Captain Colbeck, Mr. Hutchison, Mr. Landon, Mr. Macandrew, and Mr. Murray (Chairman)

The minutes of the previous meeting were read and confirmed.

Mr. Nicholas Reid attended and gave evidence, which was recorded.

Dr. Hector, of the Meteorological Department, attended, and was examined, his evidence being taken down.

Mr. Ballance's motion (notice of which was given at last meeting) was next considered. *Resolved*, That, with a view to the extension of the practical usefulness of the Geological Department, the name should be changed to that of the Department of Science and Industries, and that the department should be charged with the duty of collecting information, and reporting to the Government from time to time, on the best means of establishing and encouraging the agricultural, mining, and manufacturing industries of the colony.

On the motion of Mr. Ballance, *Resolved*, That the following be added to the former resolution—viz.: That the Government be requested to place a sum of £1,000 upon the estimates towards giving effect to the above resolution.

On the motion of Mr. Macandrew, *Resolved*, That, in the opinion of this Committee, it is

expedient, in the interest of agricultural industry, that distillation of spirits should be resumed in New Zealand, and that there shall be a differential duty of 6s. per gallon in favour of the colonial manufacture; such differential duty to continue for, say, five years.

Moved by Mr. Landon, That the duty upon imported jams, jellies, and preserves should be increased by 1d. per lb.

The following amendment was then moved by Mr. Macandrew: That the word "penny" be struck out, for the purpose of inserting the word "halfpenny" in lieu thereof. On the question being put, That the word "penny" stand part of the question, the Committee divided, and the names were taken down as follows:—

Ayes.—Mr. Ballance, Mr. Landon.

Noes.—Captain Colbeck, Mr. Macandrew

The votes being equal, the Chairman gave his casting-vote in favor of the Noes. So it passed in the negative. Then the question, as amended, was agreed to.

The Committee then adjourned till 10.30 a.m. the following day

TUESDAY, 16TH AUGUST, 1881.

The Committee met pursuant to notice.

Present: Captain Colbeck, Mr. Landon, and Mr. Murray (Chairman).

The minutes of the previous meeting were read and confirmed.

On the motion of Captain Colbeck, *Resolved*, That the proposed Department of Science and Industries should, with the view to the establishment of olive-culture, import by plants, seeds, or trunks, as may be found best, the most suitable varieties of the olive-tree, for distribution by the department, upon such terms and in such parts of the colony as the department shall consider best; and that, as an inducement to the planting of olives, twice the amount of land should be given for each acre planted in olive-trees than is granted under the laws and regulations for the encouragement of the planting of forest trees.

On the motion of Mr. Landon, *Resolved*, That the Government should, as soon as possible, import sorghum seed for distribution, and should also import the machinery required for the manufacture of sugar from sorghum, the cost of which your Committee have in evidence will not exceed £70.

Resolved, That the following interim report be agreed to:—Your Committee, having taken into consideration the aid to agriculture which local markets for cereals afford, and, having considered that if spirituous liquors are to be used, these might be not more injurious if produced in the colony than if imported, while they would, if produced in New Zealand, save a large amount of money yearly, the annual import of spirits amounting to £212,409, of which £109,574 are for brandy, which is commonly reported to be largely composed of raw grain whiskey imported into France from Britain, or manufactured from beetroot, and after manipulation is exported as brandy. It is found that grain damaged for food is still suitable for distillation, which would enable much that is now comparatively valueless to be utilized, and would prevent oats ever falling to the extremely low rates which prevailed of late years. The establishment of distillation would also be useful in view of the hopeful prospects laid before your Committee of the early manufacture of sugar in the colony, a subject which will be found treated of in another part of their report. The Committee have, therefore, the honor to report that, in the opinion of this Committee, it is expedient in the interest of agricultural industry that distillation of spirits should be resumed in New Zealand, and that there shall be a differential duty of 6s. per gallon in favour of the colonial manufacture; such differential duty to continue for, say, five years.

This being all the business, the Committee adjourned *sine die*.

FRIDAY, 19TH AUGUST, 1881.

The Committee met pursuant to notice.

Present: Mr. Ballance, Captain Colbeck, Mr. Macandrew, Mr. Murray (Chairman), and Mr. Wright.

The minutes of the previous meeting were read and confirmed.

Sir George Grey attended, and gave evidence relative to the growth and culture of the olive and other trees, his evidence being recorded.

Mr. McArdle was present, and made statements relative to the improvement of fruit-trees, and the management of orchards.

Captain Colbeck gave notice that he would, at the next meeting, move, That this Committee recommend the compilation and printing of, in pamphlet form, the papers read before the South Australian Chamber of Manufactures; the letters of the Commissioner of Agriculture, United States; and other such information as has been obtained in evidence, especially that of Sir George Grey on the subject of the cultivation of the olive and manufacture of olive-oil; also the cultivation of sorghum and manufacture of sorghum-sugar; also the methods adopted in the drying and preservation of fruit; and that the Department of Science and Industries be charged with this duty

This being all the business the Committee adjourned.

TUESDAY, 23RD AUGUST, 1881.

The Committee met pursuant to notice.

Present: Mr. Ballance, Captain Colbeck, Mr. Hutchison, Mr. Landon, and Mr. Murray (Chairman).

The minutes of the previous meeting were read and confirmed.

Mr. Seed, Secretary of Customs, attended, and was examined relative to the reduction, &c., of the tariff, his evidence being recorded.

Captain Colbeck made a statement showing the necessity of adopting olive-growing, and his evidence was taken down.

The Committee having considered the Order of the House, referring back the report on olive-culture to them, on the motion of Captain Colbeck, *Resolved*, That the Committee has taken further evidence, which has confirmed it in the opinion expressed in the report already presented to the House.

Captain Colbeck's motion, notice of which was given at last meeting, was next considered.

On the motion of Captain Colbeck, *Resolved*, That this Committee recommend the selection from, and printing in pamphlet form, the papers read before the South Australian Chamber of Manufactures, the letter of the Commissioner of Agriculture, United States, and such other information as has been obtained in evidence, especially that of Sir George Grey on the subject of the cultivation of the olive, and manufacture of olive-oil, also, the cultivation of sorghum, and manufacture of sorghum-sugar; the methods adopted in the drying and preservation of fruit, and also any practical suggestions for the cultivation of tobacco; and that the proposed Department of Science and Industries be charged with this duty

This being all the business, the Committee adjourned till to-morrow, the 24th instant, at 11 a.m.

WEDNESDAY, 24TH AUGUST, 1881.

As the House was still sitting at 11 o'clock, the Committee notified for that hour did not meet.

FRIDAY, 26TH AUGUST, 1881.

The Committee met pursuant to notice.

Present: Captain Colbeck, Mr. Lundon, Mr. Macandrew, and Mr. Murray (Chairman).

The minutes of the previous meeting were read and confirmed.

Mr. Swanson, M.H.R. made a statement, which was recorded.

The Committee proceeded to consider the advisability of having the letters which had been brought before them printed, and, on the motion of Mr. Macandrew, *Resolved*, That the following letters only should be printed: From Mr. A. Vollbracht, on the matter of tobacco; and from Mr. Kirkpatrick, on the matter of jams and preserves.

On the motion of Mr. Macandrew, *Resolved*, That, in the opinion of the Committee, the manufacture of farina in New Zealand holds out great advantages to agricultural enterprise, and only requires a commencement to become an extensive and important industry. With this view it is expedient that a bonus should be offered of such amount, and on such terms and conditions, as the Government may deem most likely to secure the object arrived at.

On the motion of Captain Colbeck, *Resolved*, That all evidence selected by the Committee be printed.

The Committee then adjourned till Monday, the 29th instant, at 11 o'clock a.m.

MONDAY, 29TH AUGUST, 1881.

The Committee met pursuant to notice.

Present: Captain Colbeck, Mr. Lundon, Mr. Murray (Chairman), and Mr. Wright.

The minutes of the previous meeting were read and confirmed.

On the motion of Mr. Wright, *Resolved*, That the Chairman be instructed to write to Dr. Hector, to ascertain how far he is prepared to assist the Committee in carrying out the objects they have in view in the establishment of the proposed Department of Science and Industries, and, if he is not prepared willingly to carry out the recommendation of the Committee, as contained in Mr. Ballance's resolution, if he will state his reasons for declining.

On the motion of Mr. Wright, *Resolved*, That a bonus of 1s. per gallon should be offered for all rape- or linseed-oil manufactured before the 31st December, 1887, by machinery permanently established in the colony, from linseed or rape-seed grown in the colony. The bonus to be payable from time to time to any persons producing quantities of 1,000 gallons and upwards. That when bonuses have been paid upon an aggregate of 100,000 gallons no further bonuses should be paid.

On the motion of Captain Colbeck, *Resolved*, That, in addition to the recommendations made with reference to changes in the tariff, the following changes be made: To remit duty on nitric acid and alum; to impose duty of 1d. per lb. on bacon and hams; to remit duty upon borax.

The Chairman was directed to draw up a final report, whereupon

The Committee adjourned till the following day at 11 o'clock.

TUESDAY, 30TH AUGUST, 1881.

The Committee met pursuant to notice.

Present: Mr. Ballance, Mr. Hutchison, Mr. Lundon, Mr. Macandrew, and Mr. Murray (Chairman).

The minutes of the previous meeting were read and confirmed.

The Committee proceeded to consider the final report, which, being amended, on the motion of Mr. Ballance, it was *Resolved*, That the report be adopted.

The Committee then adjourned.

MONDAY, 5TH SEPTEMBER, 1881.

The Committee met pursuant to notice.

Present: Captain Colbeck, Mr. Lundon, Mr. Macandrew, Mr. Murray (Chairman), and Mr. Wright.

The minutes of the previous meeting were read and confirmed.

The report was reconsidered, and the following additions were agreed to: "That a bonus of £10

per ton should be offered for sugar produced from sorghum grown in the colony before the 31st December, 1887. The bonus to be payable from time to time to any persons producing quantities of 5 tons and upwards. That when bonuses have been paid upon an aggregate of 200 tons no further bonuses should be paid. Your Committee recommend that a bonus should be offered, with the view to ascertain the price at which cotton can be grown, and the suitability of the soil and climate of the northern parts of the colony for its production."

A letter from Mr. H. A. Cowper, of Hokianga, relative to cotton-growing, was read and considered; and, on the motion of Mr. Wright, *Resolved*, That the Committee, having read and considered a letter from Mr. H. A. Cowper, of Hokianga, respecting the growth of cotton in New Zealand, recommend that a bonus should be offered with the view to ascertain the price at which it can be grown, and the suitability of the soil and climate of northern parts of the colony for its production.

On the motion of Mr. Wright, *Resolved*, That the letter of Mr. H. A. Cowper be printed.

A letter from Messrs. Bardsley and Sons, relative to soaps and candles, and methylated spirits, was read and considered. On the motion of Mr. Lundon, *Resolved*, That, as the letter contains statements which are contrary to and opposed to facts, no notice should be taken of it.

On the motion of Captain Colbeck, *Resolved*, That a bonus of £10 per ton should be offered for sugar produced from sorghum grown in the colony before the 31st December, 1887. The bonus to be payable from time to time to any persons producing quantities of 5 tons and upwards. That when bonuses have been paid upon an aggregate of 200 tons no further bonuses should be paid.

Moved by Captain Colbeck, That these resolutions be added to the report.—Carried.

The Committee then adjourned *sine die*.

MINUTES OF EVIDENCE.

MONDAY, 15TH AUGUST, 1881 (Mr. MURRAY, Chairman).

Dr. HECTOR examined.

1. *The Chairman.*] Dr. Hector, we have sent for you to ask you a few questions about different subjects. First of all, the olive?—I have no great experience of olive-growing countries; but, as far as reading can inform me, I know a little about the subject. There was a report made some years ago on this matter by Mr. Glyn (H.-20, 1877), and I find a great discrepancy between that and other information that is available. That report states that olive-trees grow 400 or 500 to the acre, and produce from 20 lb. to 75 lb. of oil each year; but, in a work quoted by Baron von Mueller, who collected information for the Victorian Government, it is stated that thirty olive-trees can be planted on an acre for permanence, and each tree, under ordinary circumstances, will produce fruit for 4 lb. to 5 lb. of oil annually. I only want to point out this great discrepancy as requiring explanation. There is no doubt the olive-tree would grow very well in some parts of New Zealand, as, for instance, in the Upper Mokau Valley, and along the coast in proper situations between Napier and the East Cape. Then, again, there are some suitable spots for it along the coast in the North Auckland District. It requires a loamy calcareous soil, and the direct influence of sea-air. The olive-tree rather enjoys drought occasionally. If it can get root irrigation the tree thrives better with occasional droughts; but, in any dry situation or seasons, irrigation must be resorted to, otherwise the yield of fruit would not be so great. It can stand occasional frost if not too long continued and if the thawing which follows the frost takes place with rain or mist, as dry searching wind is fatal. The lowest average winter temperature it stands is 45° Fahr. This restricts it to those parts of New Zealand I have mentioned. It requires a calcareous soil: there must be lime in the soil, for in too siliceous soils it may grow, but does not bear well. That would restrict a great part of the North Island. It is propagated by seeds and cuttings, but chiefly by truncheons. These truncheons or stumps are placed horizontally in the ground. The slopes of hills are requisite; olives would not thrive or bear fruit on flat ground.

2. What is a truncheon?—A truncheon is a portion of stem cut off the tree. You cut up the tree in lengths of from 1 foot to 18 inches, and the young plants throw from the buds. It is almost peculiar to the olive this propagation. There are two or three species growing in the forest, on the hills in the vicinity. Although they bear quantities of fruit, it is of no commercial value.

3. What name do they go by?—Maire. There is another tree also called maire by the Maoris. There are three species of olive indigenous to New Zealand altogether; there is one in Mr. Brandon's garden now bearing fruit. Of course the production of olive-oil is quite a thing in the future. The growth of olive-trees must be commenced at once, but it would be a long time before they become of any importance. They are extraordinarily hardy and long lived, but the older they grow the better they seem to bear.

4. When do they begin to produce?—I do not know exactly. Sir George Grey has a plantation of olive-trees at the Kawau, and I think he told me last year they got a good deal of fruit from them. It is about fourteen years since they were planted, I think. William Macarthur's olive-grove in Camden is loaded, but, notwithstanding the abundance of fruit, unless you imported people from the South of Europe, where they are brought up in the industry, it is very difficult to turn it to account: as a matter of fact, enormous quantities of olives drop to the ground and rot. At the Sydney and Melbourne Exhibitions they showed olive-oils in quantities from a number of different districts, and especially from South Australia. I think it is twenty or twenty-five years since these olive-groves were planted out, and it is only now being followed as an industry. The olive-oil is of very fine quality, but I understand the yield has not yet reached the yield of that in South Europe.

5. *Hon. Major Atkinson.*] You have got information as to the olive in South Australia?—I can get it.

6. *The Chairman.*] When could you get it?—I can write for it; but I might find a document on the subject that was given to me at the Exhibition in Melbourne. If I find it I will send a written statement.

7. *Mr. Macandrew.*] In what direction should the action of the Government be?—To get out some olive-trees, and distribute them, and require some kind of report—say, from some officer connected with the Crown Lands Department to report from time to time what is being done. We could make inquiries through our Agent-General in England. Of course he would get the information as to the plant that would probably grow best in this country. There is a great variety of plants in the olive.

8. I believe the whole of the quality of New Zealand cloth springs from the bad oil they use for the purpose of manufacture. I mean fish-oil, and the smell can never be extracted from it by any amount of washing?—I am of opinion that the parts of the colony I have named are suitable for growing olives, and the sooner the matter is taken in hand the better. You cannot begin it too soon. All these things might have been taken in hand many years ago, I think.

9. Sir George Grey's began to bear in six years, but the olives were not of any value. I would like to ask you—we have had in evidence this morning that we could not produce castor-oil?—It is growing as a weed in the North. I do not know the quality; it grows very freely. I doubt whether the higher commercial quality of medicinal oil could be got from these; but, for lubrication purposes, castor-oil could be grown in the North. Linseed-oil could very well be made in this colony, and made most profitably in most parts of the country excluded from the chance of making olive- or castor-oil.

10. *Mr. Macandrew:* If the linseed were on the spot, many people might be induced to put in a certain quantity as part of their crop; but, if the seeds are not readily available, it puts it off another year.

11. *The Chairman.*] The price is a mere bagatelle?—Yes. The great thing is to divide the process in manufacture. There is a certain process to be carried on locally, and then the material should go to large mills. If a man attempted, upon his own property, to manufacture the oil, and manufacture the fibre, and to deal with the whole subject, he would probably fail altogether.

12. *Mr. Macandrew.*] I have always thought it better to go into that than New Zealand flax?—Yes; very much.

13. *Mr. Ballance.*] Do you think young olive-trees could be produced in the Botanic Garden here?—Yes, they would do well; but it is not the most suitable soil and climate for experimental culture of the olive.

14. Would it be useful to commence the growth of the trees here for distributing in other parts of the country?—I would rather put them in the most favourable situations from the beginning. They could be received for distribution, but they would not improve or yield good crops. There might be more suitable places found in the vicinity, however.

15. Would you suggest that an order should be sent Home for these plants, and would you place them in the most suitable parts of the colony when they came out?—The most practical way would be to get the plants out, and to call for applications for the plants from private individuals.

16. Would you not plant them in some central place? The applications might all come in at once, and you might distribute them to those who would take care of them very partially?—We might choose a place very well for them—in some of the gullies about Napier, for instance.

17. There would be a difficulty in taking care of them in those nurseries, would there not?—Yes, unless it could be done by private enterprise.

18. You think the Government should take control of these nurseries. Supposing you sent an order for 100,000, they would not occupy a great deal of space; they could be put in one of the gullies here?—Even if the Government imposed a small charge for them, I believe they would soon get distributed, from my past experience.

19. The difficulty would be in letting them get into the wrong hands?—No, it is rather that of losing all record of them, and therefore not getting the result of the experiment for future guidance. I may mention that, with regard to mulberry-trees, the Government went to a great deal of expense some years ago. The trees were distributed in different directions, and one person received very substantial assistance in propagating these mulberry-trees; but it all came to nothing, for the want of some Government officer to make a periodical report, otherwise the Government will never know how far such experiments succeed.

20. Do you not think the best way would be to publish hand-books on, say, olive-culture, sericulture, castor-oil, and so on? Would not that be done by your department?—Yes; but we could not add very much to what is already published until experience had been gained in this country. We could give an experience which is more valuable than all others—the experience of the soils suitable for particular industries.

21. *Mr. Landon.*] Is it dangerous to the children eating these castor-oil berries—the Native children eat them?—Yes, it acts on them as the medicinal oil, and, in addition, the skin contains an acrid poison, like croton-oil in its effects.

Witness: I beg to ask the Committee's attention to very important discoveries, made during the last few years, relative to the production of sugar from sorghum. Sorghum has for many years been grown in America for the production of glucose or syrup, which is sugar in an uncrystallizable form; but in 1878 experiments were commenced by the Department of Agriculture of the United States of America, with the view of ascertaining whether, by modifying the culture and methods of manufacture, crystallizable sugar could not be produced remuneratively. These experiments, which are of a most elaborate nature, have been highly successful; and it has been shown that, at certain seasons of the growth of some varieties of the sorghum, the glucose diminishes, and the amount of sucrose or true cane-sugar increases, and that the sorghum grown in temperate climates is then nearly, if not quite, as rich in marketable sugar as the tropical sugar-cane. This discovery has created a lively interest in the growth of sorghum, and, as it grows freely in the North of New Zealand, it promises to become of importance to this colony. Judge Gillies was so impressed with the importance of the subject that he obtained a supply of the best varieties of the seed, and a complete though small-scale machinery-plant

for the manufacture of sugar. He obtained an abundant crop last season near Auckland, and has supplied me with canes for analysis, and a small quantity of seed, of his own raising, for experiment. Owing to his absence from Auckland the manufacture of sugar was not attempted last season; but there is no doubt that the canes were raised to perfection. The machinery that has been specially invented is exceedingly simple, and can be made on a small scale, or for the requirements of a large establishment. It comprises a crushing-mill and evaporator and tanks. A complete portable set of the machinery of the smallest size, for use on a single farm or for experimental purposes, allowing for the freight and the cost of fitting up, would be under £70. A mill of the most complete kind and largest size would cost about £6,000, including engines, boilers, centrifugal drier, tubs, tanks, and all necessary appliances. One of the great advantages of sorghum is that there is no waste. The seed-tops and cuttings form excellent food for cattle, and the syrup that remains after granulating out the sugar is valuable for the brewer. This is very different from the beet-sugar, as the uncrystallized syrup is acrid, and must be thoroughly removed from the sugar, reducing the yield and making it comparatively flavourless. The important point is that it seems beyond doubt that beet and even cane-sugar will be displaced by sorghum-sugar in temperate climates. The averaged yield of crystallized sugar from the tropical cane is 15 per cent., of beet 12 per cent., and in the best varieties of sorghum it reaches from 16 to 17 per cent. In 1874 samples of the common sorghum, grown in different parts of Auckland, were analyzed, and gave from 5 to 13 per cent of sugar. (See Laboratory Report, 1874, page 28.)

22. *The Chairman.*] How far south would sorghum grow?—It grows in Minnesota, and can survive during a severe black frost. In one case there the thermometer went down to 20° Fahr., and they suspended operations for several days, yet, after resuming, they could not find any difference in the juice.

23. Could it be grown in Otago?—Yes, I think so.

24. Does it require a hot sun to ripen it?—In Minnesota they find it better to get the seed from a hotter climate. I am going to get some seed from Auckland.

25. Is there sufficient sun in Canterbury and Otago?—Yes; in the interior of Otago it is hotter than in any other part of New Zealand.

26. *Mr. Macandrew.*] Would the irrigation in the Dunstan Plains grow them?—Yes.

27. *Hon. Major Atkinson.*] I should like to know whether there is a plant in New Zealand?—Judge Gillies brought one out. He is going to lay out some acres. He is going to put in a lot more this year. [Witness explained the machinery used, from a sketch on the table.]

28. *The Chairman.*] It has been proposed by the Committee, "That, with a view to the extension of the practical usefulness of the Geological Department, the name should be changed to that of the Department of Science and Industries; and that the department should be charged with the duty of collecting information, and reporting to the Government from time to time on the best means of establishing and encouraging the agricultural, mining, and manufacturing industries of the colony. That the Government be requested to place a sum of £1,000 upon the estimates towards giving effect to the above resolution"?—It would be only a change of name. That is what we have been doing all along. It is an extension of the name only, not the duties, as there are none of those branches that I have not been always willing to report upon. If we are to be put in charge of collecting information, it is a question of money: what funds will be at the disposal of the department for doing it.

29. *Mr. Ballance.*] That suggests a very much larger sphere to be engaged in. You do not report upon the various industries?—I think we have done so to a very large extent, as the various reports show. Is it intended that we should have to collect the statistical work relating to the industries of the colony? For instance, to control the Wardens' reports relating to the statistics and working of the gold fields. I do not know whether the Committee recommend that.

30. *Mr. Ballance.*] What department takes charge of that now?—Gold Fields, Crown Lands, and the Mines Department. The material is gathered in all these departments, so there is a great deal of overlapping of work.

31. *The Chairman.*] You would not require to keep separate officers to get the information. You would get all the information?—The official way to do it would be to get all these departments under one Minister, and then there would be no friction in applying to other departments for material. At present I do not see how we are to collect that information, unless the Gold Fields Department supply it. I would have to wait until the annual reports of the departments are out to provide the material, and then use it for special reports. But, perhaps, I do not quite understand the scope of the proposal. It seems to me that the work of collecting it would involve more expenditure than I have under my control just now. It could only be done by curtailing expenditure in another direction.

32. *Mr. Ballance.*] The olive. A great deal of information on that subject might be diffused, after collecting it, by hand-books. I presume that expenditure would be allowed if you reported such expenditure necessary. You would apply to the head of the department, and it would be for the Minister to say what vote it should come under: it would be for the Minister then to say whether it should be submitted to Parliament or not. If the vote is not submitted to Parliament, then, of course, you could not go further; but, after the amount was voted by Parliament, you would produce the information, and give it to the public in the report as I have said?—I have a great deal of material already that wants opportunity of publication. It must be always understood that, if there is more work to be done, there must be additional assistance provided for the department.

33. *Mr. Landon.*] Would it be better to put a vote on the supplementary estimates, so as to buy the machinery. To my knowledge there is a great deal of sorghum grown in the North?—These machines are portable; they could be taken to any place necessary. The cost would be in giving the experiments such certainty as to yield results to be of use to the colony afterwards. It would not do to take sorghum from the Natives without knowing the circumstances of its growth. The Government should obtain land by lease, rent, or otherwise, and grow a crop of sorghum under special conditions.

34. *Mr. Macandrew.*] Would it not be better for the Government to offer a bonus?—Yes; but these bonuses have not done much good towards the rapid extension of any industry.

35. Suppose you offered a bonus to any person who produced a certain quantity of sugar from sorghum: I think that is the simplest way of doing it?—The only thing to fight against is the timidity of capital: people are not easily tempted to go into a thing they do not quite understand.

36. *The Chairman.*] To settle this question of sorghum: You have some seed?—A little.

37. You have not any to spare for distribution throughout the colony?—No: I only proposed to try this seed, because it was grown in the colony, and have but a small sample.

38. At Philadelphia or Washington you could get it. Would it be too late to get it for this season?—No, certainly not.

39. There would be time to get some for this season if sent for now?—There might be.

40. If we were to telegraph to Auckland, to the Government Agent, in time for the mail steamer, there to order it, you could do that this afternoon?—It would be in time to get seed.*

41. *Hon. Major Atkinson.*] It would give great confidence if you took the plant and did a little manufacture?—Yes.

FRIDAY, 19TH AUGUST, 1881.

Sir G. GREY, K.C.B., M.H.R., examined.

42. *The Chairman.*] You have stated, Sir George, you have some information with reference to the cultivation of the olive, and the utilization of its products, which you wish to lay before the Committee. The Committee will be glad to hear what you have to say about it?—I was naturally struck by a statement made in the House that it seemed probable in some parts of New Zealand the olive would succeed, while I knew, from several years' experience, that the olive has succeeded remarkably well in New Zealand. Several species of olives bearing fruit abundantly have been growing with marked success. I believe there are portions of New Zealand, now lying comparatively speaking waste, where the olive would be a source of great future wealth. For example, to take the hills along the Wanganui and in the Thames District, which latter hills produce nothing now, and yet are capable of becoming one vast forest of olive-trees. The olive does not require fencing, because sheep will hardly touch it, and it does not injure the pasture; on the contrary, it rather kills the scrub and promotes the growth of grass under it. It appears wrong to see great tracts of country wasted, left in the manner they are now, when they could be made useful at so trifling an expense as planting olives. I believe there are plenty of olive-trees in the country now to afford truncheons and cuttings, from which and their progeny in a few years all the plants required would be produced here. I think the account given by Dr. Hector of the habit of the olive-tree—that is, that it should be grown in open spaces where it would get plenty of air, especially sea-air—as well as his remarks upon the kind of soil in which it should be grown, are entirely accurate, and contain all the information necessary upon the subject. What I particularly wanted to state was that it is not a question now whether the olive will succeed in New Zealand or not, because experience has proved that it does succeed admirably; and the subject of labour to make its produce of the highest value, from the cheapness with which its berries may be collected, is a different question, depending upon the amount of population. But that should not prevent us from preparing in this country a valuable product, which may be extensively and profitably utilized some years hence when the population is much larger than it is now. This seems particularly the case with regard to the olive, which does not here begin to bear fruit under a period of ten or twelve years after the truncheons have been planted; so that it is necessary to make provision beforehand for the coming wants of the country by getting the trees planted now, which get more valuable every year as they grow older until they have attained a great age. That is what I principally wished to say on the subject, and I wished also to place before the Committee a work regarding the olive, which I have already given into the hands of the Chairman.

43. You have grown the olive sometime on your estate at Kawau?—Yes, for a period of fifteen or sixteen years, I suppose.

44. When did they commence bearing?—I think when about twelve years old.

45. In how many years from the time of grafting do you think they would become profitable?—That depends entirely upon the population. I should think the probability would be that the tree itself would take from twenty to twenty-five years before it would be really a source of much profit.

46. At what would you estimate the produce per tree in New Zealand?—I cannot state that, but the yield is large. I have seen olives in other countries, and for young trees the yield here is large now.

47. From what you have seen, do you think the average yield here would be equal to other countries or superior?—I think the yield would be equal to that in an ordinary olive-country. But it is a difficult question for me to answer, because I have not grown olives on the soil I think the best. I think Kawau is a good climate for olives, but not generally the best soil. I have always stated my impression is that the Upper Wanganui would be the finest country in New Zealand for the olive.

48. Do you think the Napier District would suit?—I think so, very well.

49. Would any part of the Middle Island be available?—I am inclined to think it would. I think the country at the foot of the hills facing the north and east would be particularly good. I have always thought the Oamaru District a peculiarly good country for the olive.

50. Would the winter frosts hurt it?—The olive does not mind some frost if it has a hot sun in summer. That struck me as peculiar to Oamaru. The olive-fruit ripens in the autumn after a long summer.

51. I believe summer frosts are very prejudicial to the olive?—Well, I am not able to say that.

52. You have distributed some plants of the olive, I understand?—Yes.

53. To what places have you sent them?—I have given them to different people inhabiting different places. They are now trying them at the Thames. I am sending a good many truncheons there. I believe they are well suited to a mining district. They would not interfere with mining at all, but turn land otherwise waste into profitable ground.

* An order for sorghum-seed was sent to America on the 19th June. A further order has been telegraphed to catch the outgoing mail at Auckland.

54. What do you consider are the best varieties for New Zealand?—I have seen two succeed equally well. I have tried the best Spanish variety and the best French varieties, and they seem to succeed equally well. The variety is really a matter of taste. There are a great many varieties in olive countries, and some people believe one the best, and some another. I think that is really a matter of fancy. Perhaps it may depend, in part, also on the particular soil the variety is grown upon. One variety may succeed much better upon a particular soil than another.

55. Do you think, then, olive-culture would be a wise provision for the Legislature to make for the increasing population of New Zealand?—My belief is that the great object of the Legislature of New Zealand—at least, one of its great objects—should be to look to prospective industries as much as to present ones. I believe the olive industry, as a prospective industry, is one we should look to as much as any other. Hence the great interest I have always taken in the matter.

56. You think in the future, in about twenty to twenty-five years, it would be the means of affording profitable occupation to a considerable population—it would be, more especially, a “cottage industry”?—I think in twenty-five years it would be a very valuable thing. I believe olive-trees would be very valuable in a few years, as yielding abundance of pickled olives, and for feeding fowls. Fowls eat the fruit of the young trees very readily as it falls to the ground, and cottagers might keep a large number of fowls, feeding them thus in part on the olives, and allowing them to run over the pasture land. I should think in future times it would be a very great industry indeed in the country, for oil-producing purposes—there is a very great probability of it.

57. Then, for the manufacture of oil, should there be a central establishment where to send the olives to?—My idea is it should be done on the co-operative principle. Of course, each proprietor could have his own small mill, if he chose. I think it would, however, be best to have a large mill as common property; then every producer could sell his fruit to the mill, and could share in the profits of the mill subsequently. I believe small farmers, in that way, would have a most valuable property given to them in the form of olive-trees. I do not think there could be anything more useful than that.

58. How do you think the growth of olives could be encouraged, so that that could be carried out?—I think there is no doubt that people would grow the trees if they could get them. The first trees might be distributed among people, and others, seeing what was being done, would endeavour to get them themselves, merely from emulation. I think it would want very little encouragement. You might encourage people, also, to plant what they call olive-yards. Some few persons would, perhaps, make a special industry of it. You may do that also.

59. When Governor of South Australia, did you take any part in the introduction of olives?—I was there when the first olive-trees were introduced, and was much interested in the thing. I have heard many of these have been very profitable since. There is just an instance in point: I am speaking of South Australia about 1842 or 1843; so they have taken there nearly forty years to develop. There it is now a growing industry.

60. Are they producing oil there now?—Yes; some of my friends, who were interested with me in the introduction of olives, are now producing very good oil from them. They still live, and have the pleasure of seeing the industry succeed.

61. I suppose you are aware there is a large demand for olive-oil, and also for olives?—I am; I know at Kowai we are able to produce already very good pickled olives. I doubt if I have ever seen better.

62. So that an article of food is obtained, as well as the oil?—Quite so. I think very highly of that. I think in twelve years after beginning there might be not a cottage to the north of Auckland in which part of the food of the family would not be pickled olives. They would be very healthy, and would be looked upon as a little luxury at no cost.

63. Do you think olive-oil could be utilized in New Zealand for preserving fish, and also for woollen factories?—In every way in which olive-oil is used. Perhaps I might say generally, on this: that I believe greatly in internal commerce; and the internal commerce of a country depends chiefly upon its extent of latitude and consequent variety of climate; and some of the wealthiest nations in the world are some of those depending entirely on internal commerce, such as Japan and China. I think no country in the world is better adapted by nature for internal commerce than New Zealand, from its extent in latitude, its variety of climates, all exceptionally fine, and its enormous sea-board. I believe myself it is the duty of the Legislature to encourage the introduction of every kind of plant into New Zealand suited to the different degrees of latitude. It is to that subject I principally turn my attention, with respect to valuable plants which can be cultivated with success in New Zealand. I think to enable North and South to interchange between one another products, all valuable and of great variety, all suitable for food or useful purposes, is one of the great duties of the Legislature. I think in that way the producing of olive-oil would succeed in the North; and I think, possibly, in the South manufactures will succeed. To a very great extent, I think, many manufactures can hardly be carried on without a great supply of oil. Therefore we in the North could take the Southern manufactures, and could send them our oil, which would be a very great source of wealth to both of us. What people easily forget is this: that wealth consists of things which have been produced; and that if we have abundance of food, and also of fruit and other luxuries, also good clothing in quantities, that is wealth, irrespective of money; as money merely represents the power promoting the exchange of these different things. I think New Zealand in that way, even in itself, would be one of the most wealthy countries that could be.

64. Can you make any further suggestion to our report the other day with reference to olive-culture?—I think the Government, in sending to Australia for olive-truncheons, have gone, perhaps, far enough for the moment, for the olive must be planted in September. I think every year, however, additions can be made. Every year, for a few years, you should try to get fresh plants. For instance, the other day I sent to Australia a variety of the olive they have not yet got there, one of the best; and they have varieties we have not got. I think it would be well for Government to go on every year getting truncheons and distributing them.

65. It is proposed to have a hand-book of information. Possibly the evidence you give may form part of that book. What course would you suggest to place the information before the public?—A

few years ago the Legislature gave a grant, on my request for such a book. Then, the difficulty arose of getting some one to compile and edit it; and, owing to that, it seems not to have gone on. I have made a collection of books—one of which I have placed before the Committee—with the especial view of collecting all information from which such a book can be compiled. I think it a most desirable thing not only to compile such a book, but from time to time to issue pamphlets of a special description about various industries, and to distribute them among the farmers of New Zealand. They will be received with delight and thankfulness; and I do not think a better course can be followed.

66. Do you think the proposed Department of Science and Industries would be a proper body to intrust with the compilation and distribution of this?—I have not thought that out. My thoughts have rather been confined to practical things that I believe would succeed.

67. *Mr. Wright.*] I understand you to say olive-trees will bear in ten or twelve years, but will not be in full bearing for twenty or twenty-five years?—Well, I believe it would be forty years. I mean, I believe that every year, till they reach a great age, the trees produce finer and more abundant fruit. I think they would begin to get profitable in twenty-five years, or less for oil. But, as I stated, probably every grower would in ten or twelve years have abundance of pickled olives to sell, and for his own use. They could be gathered at no cost.

68. Are you aware that in olive-countries trees are not considered to reach full bearing under forty to fifty years?—As I said, that has been the case in South Australia. I think they begin to become very profitable in about forty years. Still, I think the trees at a much younger age will yield some profit, but nothing like what the profit will ultimately be. Hence we should lose no time in planting trees now.

69. Can you mention anywhere else in New Zealand besides Kawau where olives have been growing for any length of time?—I do not think anybody else has tried, but I really do not know this; but, if they will grow in the soil there, it is quite certain they will grow much better in more suitable soil. I have not any plants in the best soil for olives. There is only one part of the Island has a limestone soil.

70. *Mr. Ballance.*] Do you not think it would be a great advantage to have a special department—a department specially charged with promoting and encouraging industries of this kind?—I believe that would be a very great advantage. I have no doubt about that. I think people have no idea of the number of plants which succeed in New Zealand, which would yield a great profit, and at small cost. There has been a perfect neglect of that subject here.

71. A practical difficulty suggests itself, how plants should first be raised in the country and then distributed, whether by Government officers or private enterprise. Have you given any attention to that part of the subject?—I think by both; but I have no doubt private enterprise would do a great deal, in distribution from one to another.

72. Do you not think the Government, to have a beginning, should import these truncheons, and distribute them to nurserymen and others?—I think that so fully, that I have applied to Government now; and they have agreed to send to South Australia for truncheons of the best kinds of olives. I have given away so many of my own, that I cannot this year take any more without hurting the trees. I think having gardens for this purpose is a matter of essential importance. The Wanganui district would be well adapted for them. There is there a great interior hilly country—partly volcanic—which is peculiarly adapted for most of these plants. There are, far inland, high mountains covered with snow the greater part of the year, and there is a flow of water from them all the year. A great part of the interior is volcanic soil of the richest kind, capable of producing all these things. I think in that kind of way it is well worth the while of the Government to establish these gardens. I understood at the abolition of the provinces a promise was made that these things should be done by the General Government.

73. Would you suggest one central garden from which things might be distributed?—Yes. They might be so distributed to others.

74. You think private nurseries might be availed of?—I think that would be a very good plan. I have generally taken this plan myself if I want to get a thing distributed. I have been obliged to tell the gardeners to come and get the things themselves. The labour and the correspondence was so great that I could not do it. I think the best plan is to make a present to nurserymen of these things, and to allow them to sell them. For instance, with the Oriental plane tree: I was especially anxious to get them propagated in New Zealand, and I allowed the gardeners each to get 300 or 400 large cuttings of this tree, which they sold, and so distributed them through the whole of the North of New Zealand.

75. You think they would distribute them without any bonus?—I think it is best to let them sell them by competition. I think they might be induced, in selling lots of other plants, to throw them in. I think people who bought them would take the greatest care of them. One plant I was particularly anxious to distribute was the *Fourcroya gigantea*—the fibre plant—a very valuable kind. One gardener carried away a great many—I think 200 young plants. I was told he sold them, when they were old enough, for something like half-a-crown each. I believe every one of the people who bought these would have taken great care of them. Probably in no other way would they have been distributed so effectually.

76. In what way do you think the olive should be distributed—in truncheons or young plants?—I should give them generally in truncheons; but, of course, you can give them in young cuttings. I have just sent for many cuttings to be sent down here. But the objection is they lose some four or five years in time; but, still that is not a great objection when you aim at a permanent result. You hurt the trees by taking too many truncheons. Of course, from every truncheon you could get, as you cut it, a good number of small cuttings, and these could be struck. I think, looking at the length of time the trees live, the loss of time by cuttings should not be considered.

77. You would suggest having different varieties from different countries?—Yes. It is an expensive thing to get yourself. For instance, the plants of the kind I got from Cadiz, I think, cost me, when everything was included, nearly £80. That was the calculation I made at the time; but then it was most expensive. They had to be got at a considerable distance from Cadiz, packed, shipped, and

sent to London, and kept there sometime, and then repacked and shipped, and sent out here afterwards. But a department such as you speak of could get things much more reasonably, because the proper plan for such a department would be to write to Sir Joseph Hooker, at the Kew Gardens. Sir Joseph Hooker, through the Government, would direct the Consuls in the various countries to procure the finest varieties, and have them sent to Kew; and there they would be properly packed and sent out. In that way you could procure varieties from every olive-growing country in Europe

78. You are aware we have carried a resolution to change the name of the Geological Department into the Department of Science and Industries?—I was not aware of it.

79. The object is to combine the practical with the scientific. These questions of science and geology should not be neglected, but developed in a new direction altogether, and the department made more useful in the encouragement of industries. Do you think a department like that, with Dr. Hector at the head, would be a way of promoting these industries—such as olive culture?—I do not think you could get a better man than Dr. Hector, from his taste and knowledge, and his being known—personally known—in Europe to all the persons who could help you best. I think, if you have that design, you should at once put yourselves in communication with the Botanical Gardens at Kew, and they would, through the Consuls, procure every valuable variety of olive for you. It would take a long time to do that; and, in the meantime, here you can make preparations to have the gardens to receive them. I think that would be the best investment of public money New Zealand ever made.

80. You would approve a vote being placed on the estimates especially for these industries?—I think it is the best thing you could do.

81. We have passed a resolution that there should be £1,000. Would you think that sufficient for the first year?—I think, probably, that will be quite enough for the first year. I think too much spent the first year would be only wasted. For instance, your communications to Sir Joseph Hooker would cost nothing. All these preparations in Europe would cost nothing, at all events for the first year; and I doubt if you would have to pay anything afterwards. All you require is to prepare places for the things when they come out. I think, to commence, that would be enough the first year.

82. Have you considered the question of sugar production from sorghum?—Yes; I think very well of that. I have never tried it myself, but I have carefully attended to the question. Sorghum, I think, is likely to be a very profitable thing.

83. Do you think an experiment ought to be made by the Government on a sufficient scale to demonstrate the practical establishment of the industry?—I do not see such an immediate hurry for that being done, because at the present moment you secure sugar from neighbouring countries and send things in exchange. You have an immense number of other industries which, I think, would pay as well as that. My own belief is, the best thing you could give to many industries would be to have sugar imported free. I have always thought that.

84. The jam-preserving industry would be one of them?—That again is a source of internal traffic to you. For instance, in the North we cannot produce gooseberry- and currant-jam. On the contrary, we could send to you logquat jams, and others you cannot produce. I think, instead of importing these things, it would be producing in the country the establishment of an internal traffic at once, besides providing an export.

85. Do you not think the best way to encourage the colonial manufacture of jam is to impose a duty on this import, rather than by having free sugar?—I should like to see both things done. I think both would be very beneficial.

86. *Captain Colbeck.*] Are you aware whether any olive-oil can be expressed from the fruit of young trees?—I have no doubt it could; but whether to a payable extent or not I cannot say

87. You are aware the process of extraction is very simple?—I am aware of the process of extraction.

88. There is evidence, in this book of yours, that two ounces of oil are used to every pound of wool in the process of manufacture, therefore it is really a necessity we should have this oil; it would be valuable information to know if you thought oil can be expressed from early fruit?—No doubt it could; but whether so cheaply as you can import it I am not able to say. But that would not prevent me from preparing for the future.

89. No doubt it is necessary we should begin to work at once if we are to foster manufactures?—I would not lose any time.

90. You quite approve our action?—Quite. I have been working in the north of New Zealand, especially at the Thames, to cover their hills with these useful trees. I think it is the wisest thing to do.

91. You do not think it safe to get plants from Australia, and to depend upon that country for our supply?—I would get what I could from Australia. I really think, with the advanced means of communication we now have, New Zealand might, in olive-culture, be started on a basis that no other country was ever started upon. I would write to Sir Joseph Hooker, to let the Consuls be requested to procure the young plants, truncheons, and trees. We want to make the whole world to aid in our plan; and we can do it without any trouble. You would at once get, in that way, every valuable species of olive from all olive-countries. Further than that, I would recommend the Committee to do the same thing with regard to the fig. I would ask that the Consuls at Smyrna and other places be directed to get the best varieties. All this can be done in the earliest and readiest manner. All the machinery to do it is in existence. You have only to touch a spring here, and a vast machine will go into action to effect your wishes. Increased civilization and intercourse have given these colonies greater facilities for such purposes than the world has ever before afforded, and we should use them.

92. *The Chairman.*] Are there any other subjects you would recommend the Committee to consider?—Several. In the first place, one thing we could produce in great quantity is tanning material of the very finest kind; that is a subject upon which I have been at work myself. I tell you that acacias succeed better here than in Australia. They are something in that way like the gum tree (eucalyptus). This climate seems to suit them in a peculiar manner. I think the Committee should at once take steps to procure these trees—this is the best time of the year—from Melbourne and South Australia. Those are the best places. They should be distributed among the settlers. As sheep do not like to eat the young acacias, settlers would be able to scatter them about on the runs, and, in a

few years, have a very valuable product in the form of bark. I have given much attention to that, and have raised great numbers of acacias; and I think you should do this at once. These acacias would do well at Wanganui—indeed in all warm parts of New Zealand—and would soon give a valuable product in the form of bark.

93. *Mr. Ballance.*] What kind of soil is best for them?—They will grow anywhere, in any soil. They have two special species in Melbourne. In South Australia they have what they call the golden wattle. The seeds of these should be procured in quantities, and distributed at once. The seeds require, before planting, to be steeped in nearly boiling water.

94. Is that a good kind?—That is the best of any kind. These tanning materials are very valuable products indeed. Of course, if we had them here, we could prepare our own hides in the country, and export them manufactured. I should say the proper time for planting the olive is September, and Mr. Rolleston has telegraphed to get the truncheons this year from Australia; and this is the time to get the seeds of acacias.

95. How long would it be before they would yield bark?—Five or six years. The acacia spreads itself. You would be simply putting in the country an industry that would then be in existence, and might at any moment be developed.

96. Would they grow on hills?—Yes; best on hills.

97. In taking the bark, do you destroy the tree?—Yes, you destroy the tree. You can strip them as they stand, or cut them. But destroying them does not matter, because there are self-sown young trees around to succeed them. Directly I get home I will send down a work giving all information on this subject.

98. How long would they take to mature?—Certainly five or six years. My idea is to prepare what I call prospective industries. You might have these trees growing perhaps thirty years, and be of very little use; but the time will come when people will feel the want of the materials, and then instead of having useless shrubs you will have something growing which will give wealth to the country. The acacias grow from seeds best. I have all these acacias growing in abundance, and could give a certain quantity of seed myself. But it is just as well to be in communication with the fountain from which the supply comes.

99. Does the frost hurt them?—Not unless too severe. What they require is hot sun in summer.

100. Would they grow as far South as Otago?—They will grow wherever the gum tree grows. They would grow quite well in parts of Otago. The seed grows readily if steeped in boiling water. I got some seeds of the golden wattle from Australia ten or twelve years ago, and I see the plants are only now coming up. The seed had not been put in boiling water first; but I saw them coming up last year from the seed which I put in ten years before. They have not been planted or grafted at all, but the seed was just thrown about. Generally I soak the seed in nearly boiling water, it then springs at once.

101. *Captain Colbeck.*] Do you know anything about Myrabalum and Divi-divi?—No. I know nothing about them. I should doubt whether they do not come from a hotter climate than this.

102. *The Chairman.*] Any other subject, Sir George?—I will name a few things which I think will succeed well in New Zealand. In the first place there is Paraguay-tea (*Ilex paraguensis*). Some millions of people use it in preference to ordinary tea. I think we should have that; it succeeds admirably in the North. I think you should also encourage the planting of the camphor-tree largely. That is valuable as timber, and the product is valuable in many ways as medicine. It succeeds very well in New Zealand, and would give a considerable export. Then I would name the carob-tree (*Ceratonia siliqua*). That succeeds remarkably here. From Crete alone 180,000 tons of that fruit is annually exported now. It makes the best food for cattle. Sheep and pigs eat it greedily, and the meat is improved by their being fed on it. It makes a kind of chocolate which is very good. There is no difficulty whatever in the growth of it. It grows with me better than I have seen it grow in any other country. It grows to a greater height here, and altogether shows itself a finer tree. The highest I have ever seen is one I have. I should say that is, perhaps—I am afraid of exaggerating, but I should think it is nearly 40 feet, and it is about ten years old. It grows from seed, and you could get seeds from England. The fruit is sold in England. It grows like the tamarind, with long luscious sweet pods. If Crete exports that number of tons annually, there is no telling what New Zealand could export.

103. What is the price of the fruit?—I forget. I know it is a very profitable product; and if from one island alone 180,000 tons are exported, and there is no limit to the demand, it must be a valuable product. It only grows in certain climates. I think the planting of almonds should be encouraged. I have not seen many in New Zealand. They grow very fast, and grow anywhere.

Mr. Ballance: I have seen but very few almond-trees.

104. *The Chairman.*] They would probably produce fruit in the centre of Otago?—I think every farmer should have a number of almond-trees about his house. I do not think the walnut is sufficiently encouraged. Then, planting of the cork-tree is not encouraged at all. I do not think it succeeds better in any part of the world than in New Zealand. It takes about twenty-four years before the first strippings can be taken; but in all these things I think you should look to prospective industries. All the hills would bear cork-trees to any extent you pleased. The medicinal aloe succeeds very well here, especially in the North. Then there is the question of the fibre plants. There are two fibre plants, the best in the world, and they succeed here extremely well. Of one kind, the *Fouquieria gigantea* I have supplied a number of plants, and could give quantities. The other is the wild pine-apple, from the fibre of which the Malays make beautiful fabrics. I could furnish a large number of young plants of that for your gardens. It is a valuable product. The common tea succeeds very well in the North of New Zealand. I do not think we could make it an article of export, but every farmer could produce his own tea, and dry it as they do in Japan. The Natives would grow many of these products.

105. *Captain Colbeck.*] You think the tea plant would do well in the North?—I am certain it would do very well. That is not a matter of opinion only. I have seen beautiful tea plants. Scents, I think, you should direct your attention to. One scent can be produced here in great abundance: that is the *Cordylina australis*, from the white flowers of the so-called cabbage-tree. There is another New Zea-

land plant of the same kind—the *Leucopogon fraserii*—which produces, I should think, one of the finest perfumes that could be got. The Natives used it before we came to New Zealand, and prized it highly. I think you should encourage gardens for the purpose of perfumes; but you can do very little with regard to these industries, unless you allow distillation in the country. It is a curious thing that this prohibition of distillation, to the extent it is carried in this part of the world, originated from some colonies being convict settlements. The design was to raise a revenue almost entirely from a duty on the import of spirits, which were very largely consumed, and hence that system of prohibition has grown in these colonies, to an extent which, I believe, prevails in no other country. Willows are plants the use of which, I think, is not known sufficiently. The weeping-willow prevents coarse grass growing under it—such as what we term the rat's-tail—only the finest grasses grow under the willow. In summer, if the boughs are cut off, there is a large supply of food for sheep and cattle above-ground as good as that on the ground. In dry weather, the willow thus affords an article of food for sheep and cattle the value of which has never been sufficiently thought of. Another willow—the African willow—is valuable for making wooden spoons, bowls, and plates. It is not grown in this country, except the few I have distributed. Every farmer could grow this willow. I could furnish numbers of cuttings of that kind of willow. The Seville orange, also, which is the best orange for several purposes, grows better, and produces more fruit here, than in any other country I have been in. Other oranges do not succeed so well, but that grows here particularly well. That orange is the best for marmalade, and yields the only really valuable orange-flower for perfumes. You have considered the question of tobacco, so I say nothing on that subject. There are two varieties of the *Pineaster*, which give the finest kind of pitch. They succeed here as well as in any country I know. They should be encouraged; there is no difficulty, and they would grow on waste lands, and they increase themselves from dropping their seed. They bind shifting sands.

106. *Mr Ballance.*] In drift-sand they have to be protected for a few years, because the tendency of the sand is to kill the young plants?—They will stop the sand drifting in a few years. When they are 4 or 5 feet high they will protect themselves, but when only a few inches in height the sand kills them. They will grow on high mountains, and will kill the ti-tree scrub. It is this pine which produces a great export from the southern sandy districts of France.

107. *The Chairman.*] I have heard 4s. is the annual production from each tree?—I believe they would produce more in New Zealand, because they grow larger here. The climate seems better suited to them.

108. Is the labour very great in collecting the resin?—There is a great deal of labour; but your object should be to work for the future, and to get people to put in trees which will yield a valuable product in the future, and in the meantime look quite as pretty as the useless trees now growing. There are two other sorts I would plant for the seed—the *Pinus pinea* and the *Pinus sabiniana*. The seed of both these are sold for food. They are like nuts, and are very nice. They ask half-a-guinea a cone for cones of the *Pinus sabiniana* in San Francisco; they grow to about the size of a man's head. You should also encourage people to plant the loquat. It makes the most beautiful hedges, bearing abundant fruit, which man and every animal eat with avidity. It makes probably the best jam in the world. We could produce that in the North, and exchange it for Southern gooseberries and currant-jams.

109. Castor-oil?—That grows like a weed.

110. *Captain Colbeck.*] I should like to hear your opinion on this resolution which I have prepared: "That this Committee recommends the compilation, and printing in pamphlet form, of the papers read before the South Australian Chamber of Manufactures, the letters of the Commissioners of Agriculture, United States, and such other information as has been obtained in evidence, especially that of Sir George Grey on the subject of the cultivation of the olive and manufacture of olive-oil, also the cultivation of sorghum and manufacture of sorghum-sugar, also the methods adopted in the drying and preservation of fruit; and that the Department of Science and Industry be charged with this duty"?—I think a publication of anything on these subjects would create very great interest, and would be prized by every cottager in the country. I think it would be received as a very great boon by the whole country. I do not think a more useful thing could be done.

TUESDAY, 23RD AUGUST, 1881.

Mr. W SEED, Secretary to Customs Department, examined.

111. *The Chairman.*] The Committee wish your opinion upon certain articles upon which Customs duties are imposed, as it might, in the interests of colonial industries, be desirable to remit the duty upon some articles, and vary it upon others. With regard to ascetic acid, what is the object of retaining the duty on that? Is it not a raw material used in manufactures?—I am not aware; but so long as there is duty to be put upon vinegar, ascetic acid must be charged. There is no particular object in keeping the duty upon nitric acid, and I see no objection to its being remitted. It is used in various arts.

112. What is the object of retaining the duty on tartaric acid, seeing that it is to some extent used as raw material?—I cannot give an off-hand answer. If remitted, it would be the loss of so much revenue.

113. Then, with regard to soda crystals: the duty on that seems to be a tax upon Native industries, as it is used for bleaching cotton fabrics and other purposes?—It is only used domestically here, I think. The amount derived is large—getting on for £1,000. I see no objection to remitting the duty on alum.

114. Mr. Reid has mentioned bacon and hams as being free. There is a considerable quantity imported from Australia here?—The duty was remitted about 1878. Prior to the remission the importation had fallen to a very small quantity. I believe the reason it was remitted was that the Colonial Treasurer was anxious to rid the tariff of a number of non-producing items.

115. Are you aware that this is the only colony that admits these articles free?—I do not remember.

116. What would you think would be a reasonable duty to impose?—I should think 1d. per lb.

117. With regard to borax?—I see no objection to the remission of the duty upon that.

118. I see, under the heading "brushware," one item, £140, free?—The probability is that the goods have been imported by the Government. It is not free under the tariff.

119. Would you recommend any alteration in the tariff with respect to candles, so as to encourage local manufacture, and rather discourage importation from Victoria?—That is quite a matter of policy.

120. I see that £24,000-worth of cement has been imported free?—It is admitted free for the construction of railway works, wharves, docks, and things of that kind. Not necessarily Government wharves.

121. I see the amount of cheese imported is very small, not £1,000?—That is because this is a cheese-producing country.

122. I notice, with regard to earthenware, some of it is admitted free?—In cases where that is done it will be imported by the Government at the public charge.

123. It has been suggested that this duty should be increased, with the view to encourage the establishment of potteries in New Zealand, where the raw material abounds?—You must remember that the local people have the advantage of the 15 per cent. duty charged on the imported articles, besides the saving of freight and breakage.

124. Does it not happen that the freight from England is about the same as the freight between the different parts of the colony, and that consequently the local manufacturer has no advantage in that respect?—It seems to me there is pretty high protection at present. I do not see how an alteration of the tariff could affect local freights.

125. Then the same rule would apply to glass. There is no duty upon bottles. Those who fill the bottles would object to being taxed?—I am sure they would. The only empty bottles that come are sodawater bottles.

126. You see no objection to the same duty being placed upon maize as upon other grain?—I see no reason why any difference should be made.

127. There is a duty imposed upon lead piping?—That was done at the instance of the people manufacturing at Dunedin. They make a large quantity of piping there. Considerable pressure was brought to bear upon the Government to make the alteration.

128. It is not advisable to be continually making alterations in that way, is it?—It is exceedingly inadvisable.

129. There is no duty on maizena and corn-flour?—The duty was taken off in 1870. It was a matter of policy. There is a very large quantity imported.

130. This is the only colony where it is admitted free. Would you recommend any alteration?—It is an article that would produce revenue, but I would not put a high duty upon it. One penny per pound would be ample.

131. I suppose the cost of collecting these duties would not be much?—That would not make any additional cost.

132. What is the duty upon almonds?—Shelled 3d. per lb., which is a high rate. Bitter almonds are admitted free. I would not recommend any alteration in that item.

133. Mr. Reid says lubricating oils should be admitted free?—All these could be produced in the colony.

134. Olive-oil is admitted duty free?—That is for the soapmakers.

135. It would not be advisable yet to make an alteration in that?—No.

135a. It has been suggested to the Committee that all oilmen's stores should be charged with duty *ad valorem*?—I do not recommend such an alteration. Fixed duties are in every respect superior to *ad valorem* duties.

136. There has been an application for encouragement in the matter of paints, but I suppose that would interfere with others?—The duty was taken off paints. That was a matter of policy. It produced a good bit of revenue, and would do so again. The duty was 2s. per cwt.

137. There is no duty upon printing paper?—No.

138. Are you aware that there are paper manufactories in the colony at the present time?—I have heard, but I have not seen them. I think it would be a bad thing to tax literature. It would be most injudicious to tax printing paper.

139. You are perhaps aware of the recommendation of the Committee with regard to the encouragement of tobacco manufacture in the colony?—I think they have gone further than necessary to secure the object in view.

140. How far would you have gone?—A remission of 1s. 6d. would, I believe, have accomplished exactly the same results.

141. Is it your opinion that at the present time smuggling of tobacco is going on?—I am sure there is. My impression is that as soon as the duty gets beyond a certain amount, smuggling commences. But the smuggling is not to such an extent as to justify a rebate of 2s. 6d. in the pound. In starting industries of this kind you start strong vested interests, and build up such political influences that the Government might not again be able to put on the duty remitted.

142. Mr. Pitt has suggested that there should be tobacco licenses?—I have recommended the same thing.

143. What license fee would you suggest?—I would not make it higher than £1.

144. Are you aware what the license fee is at Home?—5s. 3d.

145. Mr. Bardsley writes, showing that the duty is £1 19s. upon fancy soap, as against £3 10s. upon common soap?—I cannot go into that at present, I should have to think it out. Of course this is an application to protect his industry.

146. Mr. Reid has referred to spices. He says unground spices in other colonies are not taxed, or are taxed at a much lower rate than here?—I think you ought to maintain the duty on spices of every kind. It is an article we cannot produce, and is a perfectly legitimate object of taxation.

147. Are they used in manufactures in the colony—in the preparation of preserves?—Not to any appreciable extent. There has been no application made for remission.

148. Do you think illicit distillation is going on?—I am sure it is. It has increased since the duty has been raised.

149. Have you any experience in the manufacture of sorghum-sugar?—No.

150. Then you cannot speak as to the suitability of New Zealand for producing sugar from sorghum cane?—No.

151. I wish to ask you about glucose?—That is used for brewing, and large quantities are introduced now.

152. Is it absolutely necessary to use this for brewing?—Brewers prefer it. It produces better results. Chemically it is grape-sugar.

153. Have you seen the report of Professor Nessler's experiment as to the poisonous character of glucose-sugar?—No.

154. Would it not be better in the interests of local industry, and the health of the people, that brewers should be constrained to use good sound malt?—I think it would be injudicious for the Government to attempt to place any constraint on the article used, except on the ground of health.

155. Well, if it was found that glucose was worse than malt, would not it be better to increase the duty on the former?—I do not think so. It is largely used at Home. I would recommend no alteration that would constrain them to use a certain article.

156. If the duty were raised to 1d., would it be more difficult to collect than $\frac{1}{2}$ d.?—No; but I should not put it upon glucose alone.

157. With regard to varnish, it has been pointed out that the duty upon the article imported into the colony is only 6d. per gallon, whereas in New South Wales and Victoria 2s. per gallon is charged; and it has been represented that our kauri gum is sent there, manufactured into varnish, and then sent to Auckland?—It may be so; I am not aware of it.

158. And at the same time, our varnish sent to those places has to pay 2s. per gallon?—I see no objection from a revenue point of view to put on a little more duty; but I think myself the duty is a fair one.

159. The duty upon whiting and chalk is nearly 50 per cent. upon the value. Is not that very heavy?—Yes, it is.

160. Can it be produced in the colony?—I understand there is some chalk found in Canterbury now. There has never been any representation made upon the subject.

161. Does it not interfere with the manufacture of putty?—I do not think they make much putty in the colony. Whiting is most largely used for making soda-water.

162. Would you recommend the remission of duty upon this?—It is simply a question of revenue.

163. There is a small duty imposed upon sulphur at the present time. Would you be disposed to recommend a remission upon that? It is proposed to establish chemical works, and the imposition of duty upon sulphur is, perhaps, taxing raw material?—The duty is a matter of small moment. A large quantity was imported for sheep-wash. There would be no objection to remitting the duty. There is a prospect of it being manufactured now by a company at White Island.

164. Mr. Swanson has shown me a letter from Mr. Whitson, the brewer, in which he suggests that, instead of the present system of duty-stamps, the English plan of gauging should be adopted, as being less inconvenient to brewers, and less likely to lead to smuggling?—The circumstances of the two countries are entirely different, and I do not think it would be desirable to adopt that plan here.

FRIDAY, 26TH AUGUST, 1881.

Mr. W SWANSON, M.H.R., examined.

165. *The Chairman.*] Have you any statement to make in reference to the industries carried on in Auckland?—Yes. I was before this Committee about a month ago, and I then tendered all the evidence I was able to give on certain subjects. I do not know that I can give any fresh information on those matters now. When I first came before the Committee I was instructed by the people who asked me to speak for them here to try, if possible, to get a duty put on imported twine, because, since the duty has been taken off, it does not pay to make it. As there is no duty on it now, it does not pay people to go in for making it in the colony. I was also asked to try to get a protective duty put upon ink, and blue, and some other things. Varnish could be made in the colony in any quantity, and of the best kind, from kauri gum. I also brought letters to the Committee on the previous occasion, referring to the manufacture of perfumery, and showing that, if the manufacture was allowed to be carried on under such conditions as would permit the use of alcohol free (at the same time protecting the revenue), much money would be saved and many hands employed. It is suggested that, when the spirit has been (under the inspection of revenue officers) made useless for other purposes, the product could be finished for sale in the manufacturers' own premises. The spirit could, before it passed from under Government control, be put in a condition by which it would be absolutely impossible for it to be used for other purposes, and thereby the interests of the revenue would be fully protected. I am assured that there are a great many dyes and scents to be obtained from the forests of New Zealand, and there are men of means who are willing to go into the matter if sufficient encouragement is given to them. A good many Frenchmen and Italians have told me that there are various industries which could be carried on in New Zealand if they were a little encouraged. Amongst other things, they name tobacco, and sugar from beet or sorghum. I should like to see hickory, elm, and ash introduced into the south from America. I mention the south because I believe the colder southern districts would be better adapted for these trees than our warmer northern climate. Those timbers would be very useful for ship-building purposes in the colony. No indigenous New Zealand wood is equal to ash for oars. Hickory is an indispensable timber in many of the large American woodware manufactures. Should also like to

see introduced into the colony the cork-tree, olives, prunes, almonds, and the castor-oil tree. A friend of mine from the Cape of Good Hope has told me that the ostrich feather industry would do very well in the colony. He tells me that it has been found extremely profitable at the Cape; in fact, ostrich farming is a mine of wealth there to many people. A young ostrich of only one week old is worth £10, and £20 a year can be made on the average from each full-grown bird. He states that they are cheaply and easily kept, but that they must have ample ground to run over. It would take a considerable amount of money to start ostrich-farming; but there would be no difficulty whatever about that if the thing was only begun and set going. The same gentleman states, too, that Angora goats are most valuable property. I have also always thought myself that the distilling business ought never to have been stopped in the colony. If we are going to drink grog, I say we may as well make it ourselves as import it. Then, again, we do now make bells in the colony, but it is a singular fact that while a fire-bell has to pay duty a church-bell comes in free. There should, in my opinion, be the same duty on church-bells as on fire-bells—they should be both on the same footing. I think, also, protection should be given to gas machinery and apparatus, wood and iron lasts, kiln tiles and fillers, iron grates, baskets, and several other things. Canary seed—all bird seeds, in fact—coriander seeds, and a number of others we could supply ourselves with if they were a little protected. Those are the things which, I think, ought to be protected; and, I think, the things that ought to be encouraged are tobacco-growing, sugar-production from beet or sorghum, the growing of the American hickory, elm, and ash; the introduction and growing of the cork tree, olives, prunes, almonds, the mulberry, the date-palm, the walnut, chestnut, liquorice-root, the castor-oil plant, the caper shrub, aniseed, saffron, and several others. And, as I said before, I think our distilling should be done in the country; and, I may add, that, after what he told me, I fully agree with the opinions of the gentleman I have referred to as to ostrich-farming here; so much so that, were a company or an association formed to undertake it, I would take shares in it myself. And I think, too, he is right as to the introduction of the Angora goat. I do not know that I have anything further to add, as I believe what I have just said includes, briefly, all I adduced to the Committee when before it a few weeks ago.

CAPTAIN COLBECK'S statement.

Captain Colbeck made the following statement: My object in calling attention to the culture of the olive is the fact that I see that our woollen and worsted manufactories, and, in fact, all manufactories of woollen goods, will be at a deadlock, or will at least suffer inconvenience, for want of olive-oil. From information that I have been able to obtain, and from having been engaged in the importation of olive-oil, I am quite certain that the growing of the olive-tree and manufacture of olive-oil can be most successfully carried on in this country. It is not generally known that over two ounces of olive-oil is used in the manufacture of every pound of wool made into cloth or worsted fabrics. It is almost exclusively used in England for lubricating purposes, and is the best-known article for manufacturing soap for cleaning wool before the manufacture of cloth commences. As an article of food, it is of so much importance that it is said, and, I believe, correctly, that more oil is used in the City of Naples for food alone than is imported into England for manufacturing purposes. So large is the quantity used in England, that I have imported into that country 1,000 tuns a year, and have also bought large quantities from other importers. It is a singular quality of olive-oil that, mixed with wool, it does not produce spontaneous combustion, as do most other oils. In the earlier days of the manufacture of cloth in the old country, before olive-oil was easily obtainable, rape and palm-oils were used. Palm-oil came in at a much later date than rape-oil; but both would produce spontaneous combustion if the wool with which it was mixed was not put in process of manufacture within a short time after such mixing had taken place. Rape-oil would be more likely to produce combustion at an early date than palm-oil. There are few oils free from an offensive smell, and this smell is not easily extracted from the cloth after manufacture. If, for instance, fish-oils were used, it would be found impossible to eradicate the smell from the cloth after manufacture in the scouring or cleansing process; but olive-oil is entirely free from this objection. Such oils as I saw used at Mosgiel were, in my opinion, not only dangerous, but the after-effects I fancy I detected in the handling of the cloths. My opinion is that nearly all the New Zealand cloths and yarns are injuriously affected by the inferior oil used, as may be discovered from the soft slimy feel in most of them, lacking the crispness of the English-manufactured cloths, in which olive-oil is more generally used. The value of the washings of the cloths, after the use of olive-oil, is very considerable. It is used for making scented soaps, and the residuum, after taking off the oily particles, is very valuable as a manure.

The process of expressing the oil from the olive is very simple. It may be said to be a domestic manufacture; and the industry would give employment to a considerable number of people, in the gathering of the olives, expressing the oil, and preserving the fruit. In fact, the value of a small olive-grove to our children would be a fortune. I believe that in the future we shall be large producers of that valuable commodity—olive-oil, for colonial manufactures and for export. I am convinced that we ought to be the largest woollen manufacturing country in the Pacific. I believe the olive can be successfully grown north of Gisborne; but it can be grown, I think, as far south as Napier, where I feel sure the commoner sorts will succeed admirably, while in the North the very best varieties can be grown. By the commoner sorts I mean such as would produce oil for woollen manufactories, for the manufacturing of soap, and for lubricating and other purposes.

APPENDIX.

JAMS AND PRESERVING FRUITS.

Mr. S. KIRKPATRICK to the CHAIRMAN, Colonial Industries Committee.

SIR,—

Wellington, 27th July, 1881.

As you requested me this morning to state in writing what I consider necessary for the successful establishment of the jam-manufacturing industry in New Zealand, I beg respectfully to lay before you my views on the subject.

It will be necessary to allow a rebate of the duty on all sugar used in the manufacture of jams, jellies, and preserves, or to increase the duty on the imported article, for the following reasons, namely: (1.) Fruit can be bought in Tasmania very much cheaper than in New Zealand, and it will take at least three years to establish fruit-growing as a regular industry; after that time I think we will require no protection, but will be in a position to export. (2.) A rebate is allowed in Tasmania of the duty on sugar used in the manufacture of jams for export. The manufacturers can therefore buy sugar 2d. per lb. cheaper than we can in New Zealand. (3.) Wages are lower, and other expenses less, in Tasmania than in this country.

I will also take the liberty of mentioning some of the advantages New Zealand will gain by this industry being established. (1.) There will be a cash market for all fruits, a great portion of which is now wasted. (2.) It will encourage the planting of small fruits, which are a most profitable crop, and give employment to a large number of children in picking them. (3.) It will make a market for a considerable quantity of our common woods, such as white pine; it will take more than 500,000 feet of timber to make the cases for the jams and preserved fruits imported into this country every year. (4.) It will encourage the manufacture of earthenware jars to a considerable extent.

Allow me to call your attention to the fact that the duty on jam in Victoria is 2d. per lb., and that large preserving-works are in operation there, one concern employing about 230 hands. In Adelaide this industry is also carried on to a large extent, owing to the protective duty. In Sydney, a company established for the manufacture of preserves has failed. As they had no protection, the Tasmanian makers undersold them. In San Francisco, where I learned the business, I know four large firms who employ between 1,000 and 1,500 during the fruit season. I would also draw your attention to the fact that the manufacture of candles is protected by a duty of 1½d. per lb. on the imported article, and also that the confectioners and lolly-makers have a protective duty of 2d. per lb.; and neither of these industries give employment to the number of hands the preserving trade will do.

I have, &c.,

S. KIRKPATRICK.

The Chairman of the Colonial Industries Committee.

TOBACCO CULTIVATION.

Mr. A. VOLLBRACHT to the CHAIRMAN, Colonial Industries Committee.

SIR,—

Wellington, 20th July, 1881.

Referring to my reports given to the Royal Commissioners on Local Industry at Wellington, June 2nd and 5th, 1880, I only have to repeat to-day that it is not possible to grow, or manufacture with profit, any tobacco or cigars in New Zealand under the present Tobacco Act.

We are aware through our own experience, and from the evidence of good tobacco experts, that tobacco can be produced here in New Zealand better than in any other colony of Australasia, and also, in years to come, not far distant, equal to the American leaf tobacco.

In comparing our New Zealand leaf tobacco with the Victorian, New South Wales, and Queensland leaf tobacco, I have proved in connection with Messrs. Richmond Bros., formerly tobacco growers in Virginia, that our New Zealand grown tobacco is not only richer and more substantial in body, but also better in flavour, leaf, and plant. The colonial leaf tobacco ought not to be taxed at more than 1s. per pound, to encourage such a most important agricultural industry. What the revenue would lose through the above-named alteration would be gained by the masses of leaf tobacco grown in New Zealand; besides our demand for our own market, exportation will take place, either in New Zealand leaf tobacco or manufactured tobacco or cigars. Duty of 1s. per lb. of New Zealand leaf tobacco should be paid either if the tobacco be manufactured here or not. On the other side, the general public will gain by it; plentiful labour will be offered, and, besides this, the working capital remains in our colony. Our present importers will then be able to export our own tobacco and cigars to the Australian colonies, contrary to the present state, where the only dealing in tobacco is in the shape of importation.

The present Tobacco Act has encouraged smuggling at a good rate, through the tobacco clause 13, which says, "Provided that any person growing tobacco on his own ground, and manufacturing the same for the use of himself and the members of his family," &c., shall not require a licence.

Everyone who manufactures tobacco, &c., in the colony ought to have a licence; there ought to be no exceptions of this kind.

I believe Havana tobacco could be well grown in the Wairarapa District; Virginia and State seed could be successfully cultivated anywhere from the Bay of Plenty along the East Coast up to Hawke's Bay and also to Wellington; Pennsylvania seed leaf could be produced in the Wanganui District; and Connecticut in Nelson; Maryland and Massachusetts seed in Canterbury, and part of Otago. I believe, further, that on account of the mildness of the temperature, the above-named districts, with the exception of Canterbury and Otago, will produce every twelve months a good crop of tobacco.

The two most essential items in tobacco culture are, first, a good body, and secondly a good sound cure. The first is secured by rich ground with plenty of manure; the second by free exposure to the sun and air, and exclusion from rain and damp weather.

Good cultivation of ten acres will produce in the average from six to seven tons tobacco.

I have, &c.,

AUGUST VOLLBRACHT.

The Chairman of the Colonial Industries Committee.

Mr. A. VOLLBRACHT to the CHAIRMAN, Colonial Industries Committee.

SIR,—

Wellington, 29th July, 1881.

I have the honor to state, according to your request of the 26th July, that the produced samples of leaf tobacco, grown in this colony, were sent to me for examination by the following tobacco-growers: (1.) Mr. A. Osterbye (at present at Wellington), samples of Wairarapa leaf

tobacco; (2.) Mr. E. W. Gotch (formerly of Opotiki, at present in Wellington), samples of tobacco from the Bay of Plenty; (3.) Mr. Holland Richmond (formerly in the Wanganui District), samples of tobacco.

I am able to enclose letters from Mr. Osterbye, and Mr. Gotch, and also calculations respecting estimated cost for cultivating tobacco presented by Mr. Osterbye. I find that the estimates of Mr. Osterbye, for cultivating, &c., are from 15 to 20 per cent. too low. It will cost any grower, either in the Wairarapa or other parts of New Zealand, in the average from 7d. to 8d. per lb. On the other side, tobacco grown in the Wairarapa will be considered worth from 1½d. to 2d. per lb. more than any other New Zealand grown tobacco, as its quality will be superior. Good and careful cultivation will bring three crops in two years, undoubtedly. Referring to Mr. Gotch's particulars, there is no doubt that his knowledge of tobacco-growing in the colonies is of long standing; and I concur with him that one half-ounce of seed is quite sufficient for one acre of land.

Messrs. Richmond Brothers, tobacco-growers, from Virginia, United States of America, who have carefully examined the Wanganui District, concur with my judgment, that Pennsylvania tobacco could be grown with great success there, and the sample produced by Mr. Holland Richmond shows a fine leaf, good quality and flavour. As Messrs. Richmond Brothers have left the district some time ago, fearing that the cultivation of tobacco would not pay them, on account of the high tariff, I am unable to send in their report.

I should be most happy to give you further information, if required.

I have, &c.,

The Chairman of the Colonial Industries Committee.

AUGUST VOLLBRACHT.

Mr. A. OSTERBYE to Mr. A. VOLLBRACHT.

SIR,—

Wellington, 28th, July 1881.

The tobacco-leaf I handed to you some time ago, for examination, I have grown in Wairarapa, by the Ruamahunga River, in river-made soil, well sheltered from prevailing winds. You will see by examination and will understand that, in the same soil, well cultivated, the second year the tobacco-leaf will improve in quality, and, I dare say, will be equal, if not superior, to any American-grown tobacco-leaf. As you have taken so much trouble in the last eighteen months to push forward this fine industry in New Zealand, I hope you will succeed in getting your application to the Government in order, and soon start a large factory. I am still desirous to get engagement in tobacco-growing, because I feel much interest for it, and have devoted much time and a little money in order to ascertain if the climate and soil in New Zealand were suitable, and this is beyond doubt. Be kind enough to let me know if there is an engagement for me.

I have, &c.,

Mr. Vollbracht.

AND. OSTERBYE.

References—Mr. Robert Stout, solicitor, Dunedin; Mr. F. A. Krull, German Consul, Wellington.

Mr. E. W. GOTCH to Mr. A. VOLLBRACHT.

SIR,—

Wellington, 28th July, 1881.

The particulars I give you below is from practical experience, which can be depended upon. I estimate that one ounce of good seed is sufficient to plant about two acres of land. The seed should be sown in beds, north of Wellington, about the end of July or not later than the 10th of August, to insure a crop. One acre of the following kinds of tobacco, such as Virginian, Kentucky, and Connecticut, when properly grown, will yield about 1,300 lb., and only one crop can be obtained in one year to advantage. Such as Havana tobacco would yield very much less weight than the the above-mentioned amount, unless two crops could be raised, which could only be done in a very favourable season. This is the only kind of tobacco that will give two crops in one season in New Zealand. If you should require any further information I shall be most happy to give you it.

I have, &c.,

A. Vollbracht, Esq., Wellington.

E. W. GOTCH.

ESTIMATED cost for cultivating five acres of land with tobacco:—Rent or interest of land at £1 10s., £7 10s.; ploughing and harrowing, three times, £15; seed, £1 5s.; board and calico for seed-bed, £3; manure for the seed-bed, 15s.; one man to take charge of the work, making the seed-bed, attending it, assist by transplanting and keeping the plantage clean and watered, and harvesting, and sweating or curing, and drying in shed, thirty-two weeks at £3, £96; two men for keeping plantage, transplanting, harvesting, &c., twenty-four weeks, average five working days per week, at 7s. per day, £84; rent or interest of drying-shed, £8: total, £215 10s.

Estimated crop: 1,500 lb. per acre, equal each to 6½d. per lb. dry leaves. Supposing a light crop of only 1,000 lb. per acre, equal each to 10½d. per lb.

Wellington, 6th June, 1881.

A. OSTERBYE.

PROPOSED DEPARTMENT OF SCIENCE AND INDUSTRY.

SIR,—

Colonial Museum of New Zealand, Wellington, 29th August, 1881.

I have the honor to acknowledge your letter of this date, forwarding a resolution of the Committee on Local Industries and Tariff, inquiring how far I am prepared to assist the Committee in carrying out the objects they have in view in the establishment of the proposed Department of Science and Industries. The Committee appear to anticipate an objection on my part, which must arise from some misunderstanding; as, in reply, I repeat what I said before the Committee, that, as far as I am able, I will most cordially give effect to any resolution that may be passed at the suggestion of the Committee with the view of promoting the development of colonial industries, and which may be remitted to me by Government for action.

I presume that the duties expected will be somewhat as follows:—(1.) The experimental cultivation of certain plants, and the testing of their produce by analysis, and actual manufacture on a small scale; keeping careful records of the circumstances and cost of the processes employed in every

stage. (2.) The devising of conditions upon which inducements should be offered to manufacturers, by way of bonus or otherwise, with the view of securing accurate records of the results obtained, for the future guidance of colonists. (3.) The collection of information relating to various industries, and its publication in a form adapted to the wants of the New Zealand colonists.

All the above have, during the past twelve years, been to some extent under my supervision, but not in a regular manner; and I think it would be a great improvement if they were, for the future, put formally under control of this department, and proper provision made for the extra work which such investigations necessarily involve.

W. A. Murray, Esq., Chairman of Committee.

I have, &c.,

JAMES HECTOR.

SEA ISLAND COTTON

Mr. H. A. COWPER to the CHAIRMAN, Colonial Industries Committee.

SIR,—

Matakaraka, Hokianga, 21st August, 1881.

I beg leave to bring under your notice that I am in expectation of a supply of Sea Island cotton-seeds from the Cotton Association of Manchester, with which I purpose testing the suitability of the soil on my property here for the cultivation of this article. I have had some experience in this direction in the West Indies, and I feel convinced that the magnificent climate of this portion of the colony is eminently adapted for its growth. I consider it superior to the climate of Louisiana, and similar to that of Italy and Greece, in all of which countries cotton forms an important staple. I have grown it on land inferior to this in the West Indies, with which I can compare our long northern summer. That it would be a most valuable addition to our industrial productions, could its success be assured, needs not be doubted. I would therefore ask you whether you will recommend the Legislature to grant a vote for the production of, say, 3,000 lb. or 4,000 lb. of raw cotton grown on New Zealand soil.

I have, &c.,

H. A. COWPER,

Settler.

The Chairman of the Colonial Industries Committee, Wellington.

