

# REPORT

OF THE

## COMMITTEE ON WEIGHTS AND MEASURES AND ADULTERATION OF FOOD.

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REPORT BROUGHT UP 29<sup>TH</sup> JULY, 1870, AND ORDERED TO BE PRINTED.

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WELLINGTON.

—  
1870.

## ORDERS OF REFERENCE.

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*Extracts from the Journals of the House of Representatives.*

THURSDAY, THE 23RD DAY OF JUNE, 1870.

*Ordered*, That a Select Committee be appointed, consisting of Mr. Curtis, Mr. Waring Taylor, Mr. Rolleston, Mr. Driver, Mr. Macfarlane, the Honorable the Postmaster-General, and the Mover, to consider and report upon the best means of preventing Sales of Goods by Fraudulent Weights and Measures, and of preventing Adulteration of Food and Liquors; with power to call for papers and persons. Five to be a quorum. Report to be brought up in a month.

A true extract,

(On motion of Mr. Travers.)

F. E. CAMPBELL, Clerk, House of Representatives.

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WEDNESDAY, THE 29TH DAY OF JUNE, 1870.

*Ordered*, That the number of the Committee be eleven, and that the names of Mr. Potts, Mr. Graham, Mr. Haughton, and Mr. Bunny be added to the Committee on Weights and Measures and Adulteration.

A true extract,

(On motion of Mr. Travers.)

F. E. CAMPBELL, Clerk, House of Representatives.

# REPORT OF THE COMMITTEE ON WEIGHTS AND MEASURES AND ADULTERATION OF FOOD.

## REPORT.

YOUR Committee, having entered upon an investigation of the matters referred to them, beg to report as follows:—

### *Weights and Measures.*

They find that, by “The Weights and Measures Act, 1868,” all then existing laws in force in the Colony, whether under Acts or Ordinances of the Colonial Legislature, or under Acts of the Imperial Parliament, were repealed; but all districts theretofore defined as districts for the purposes of the repealed laws were, until altered, to be considered as districts under the new Act, and all Inspectors previously duly appointed were to retain their offices until resignation or removal. The Committee find that the “standard” weights and measures obtained in accordance with the provisions of the Act, and directed to be deposited in the office of the Colonial Secretary at Wellington, and kept by him under his control, are now deposited in the Laboratory annexed to the Colonial Museum, under the control of Dr. Hector, the Director of the Geological Survey, to whom has, in fact, been committed the entire discharge of the duties which by the Act are imposed upon the Colonial Secretary. Although this course is not in accordance with the law, it has proved convenient in practice; but your Committee find that the accommodation afforded to Dr. Hector for the custody of the “standards,” and for making the comparisons from time to time required by the Act, is very insufficient. They are informed by Dr. Hector that he finds it impossible to keep the instruments in that condition of cleanliness, and freedom from the effects of atmospheric action, which is so essential in such a case, the buildings in which they are kept not being in any degree fitted for the purpose. Your Committee feel that, in a matter which may most seriously affect all interests in the community, as one affecting, for example, the accuracy of all surveying operations, too great care cannot be taken for the preservation of the “standards.” In all foreign countries in which provision is made for securing uniformity of weights and measures, the detailed arrangements are placed, by law, under the authority and responsibility of a member of the Executive Government, who is usually charged with the duty of drawing up regulations, from time to time, for directing the method by which weights and measures in ordinary use are to be compared, verified, and stamped, both originally and periodically; how the duties of verification, &c., are to be performed, and by what officers, and what persons engaged in trade shall have their weights and measures and balances subject to verification; and usually official regulations made under such provisions are framed so as to include the minutest details. Your Committee recommend that this course should be adopted in this Colony, and that, although it may be attended with convenience that the custody of the standards and the duty of comparison should still remain with the Director of the Geological Survey, all responsibility should rest with the Minister charged with the department in question. They further specially recommend to the immediate consideration of the House, the necessity of providing proper accommodation for the custody of the “standards,” and for comparing and verifying the authorized copies issued to Inspectors.

With regard to the general working of the Act, your Committee find that, under the repealed laws, one Inspector had been appointed for each Province and one for the County of Westland, and that each of them had been supplied with authorized copies of the “standards;” but, from the evidence of the Inspector acting for the Province of Wellington, and from such information as your Committee were able to obtain in regard to other districts, it would appear that little is ever done to protect the public against the use of fraudulent weights and measures. It is true that the Act prohibits the use of any weights or measures which have not been compared, and imposes penalties on those who use them, or commit other breaches of the Act, as defined in section 45, but your Committee find that, in practice, this is of little use in protecting customers from frauds. Under the Act, Justices of the Peace and Inspectors may enter shops, &c., for the purpose of examining weights &c., but as no positive duty is cast upon them to do so, this part of the law is rarely if ever carried out. Your Committee cannot treat the power which purchasers undoubtedly have of taking proceedings for infractions of the law, as sufficient protection against the class of frauds referred to, for it rarely happens that private persons are willing to take upon themselves the trouble and certain degree of odium which attaches to informations of this kind, and it can scarcely be expected that other persons will voluntarily undertake such a duty.

Your Committee, after examining witnesses on the subject, are of opinion that it would conduce to the due observance of the law, and tend materially to secure to the public the advantages of a uniform system of dealing by weight and measure, if the duty of enforcing the provisions of the Act were cast upon the police force throughout the Colony, more especially by the appointment of special members of the force in the character, as it were, of revenue officers. They find that such is the case in Ireland, and that it has there been attended with great success, not only as securing the due working of the law, but also as a matter of financial economy. Upon this point your Committee find the following passage in the report of the Warden of the Standards in England for 1868-9:—

“Since 1863 the inspection of weights and measures in Dublin has been transferred to the Constabulary, as in other districts in Ireland. The remuneration to the Inspectors of Weights and Measures in Great Britain, who are police officers, appears to be nominal only, and merely sufficient to defray their district expenses. Out of the whole number of Inspectors who are not police officers, forty-three only appear to have no other occupation, their salaries and emoluments amounting to £6,378.”

## REPORT OF THE COMMITTEE ON

Your Committee would suggest that in case the law be altered in the direction last indicated, it would be advantageous that a limited proportion of the penalty inflicted might, at the discretion of the convicting Justice, be given to the informer. Your Committee are not in possession of any sufficient information as to the extent of frauds practised by means of false weights and measures, but they believe that such frauds are common. They have been informed that, particularly in the coal trade, instances of fraud are frequent; and recently, in Hokitika, persons were convicted of selling coals fraudulently, the difference in weight being nearly 4 cwt. per ton. They are led to understand that numerous convictions have taken place in Otago, where the inspection has been placed in the hands of the police, and the general information they have had certainly leads to the assumption that a change in the present system is necessary for the public interest. Your Committee also recommend that all Inspectors should be required to send in annual or half-yearly reports, and that a general report should be laid before the Legislature at the commencement of each session.

Your Committee would also draw attention to the expediency of obtaining permission to introduce into this Colony the "metric" system of weights and measures, as now used in England. They are of opinion that the necessity for such a step becomes the more urgent, seeing the probability of the Colony being brought into closer contact with nations in which that system is used.

*Adulteration of Food.*

Your Committee have given the best attention which circumstances permitted to this branch of the inquiry submitted to them.

In order to ascertain how far adulteration, either of articles imported and not sold in special packages, or of articles manufactured in the Colony, was practised, they obtained specimens of such articles, from various shops and public-houses in the City of Wellington, which they believed would indicate the general character of such cases throughout the towns of the Colony. The articles thus obtained, such as beer, coffee, sugar, wine, spirits, pepper, &c., were submitted to analysis at the Colonial Laboratory. In the case of the colonial made beers they were all found to be pure, whilst a sample of imported beer, bearing on the bottle the brand of a large and well-known English firm, was found to contain poisonous drugs, namely, *nux vomica* and *coccus indicus*. Your Committee having reason to believe that the brands of many of the larger English brewers have been forged in the Australian Colonies, and not having any means of ascertaining whether the beer in question was manufactured by the firm whose name it bore, have thought it proper to instruct their Chairman to communicate the result of the latter analysis to the firm in question. With two exceptions, the samples of coffee were all more or less adulterated; in two instances so much so as not properly to come under the name of adulterated coffee, but rather of foreign substances slightly adulterated with coffee. The spirits and wines were all more or less adulterated, the former with flavouring oils soluble in spirit, and the latter with colouring matters dissolved in acid. Your Committee do not deem it necessary to offer any fuller details as to the character and extent of the adulterations ascertained, but they feel that the subject is one which demands the attention of the Legislature, and recommend that it should be investigated during the recess, with a view of adopting some preventive measures for the future. They are informed that the spirits and wines sold by retail dealers in out-districts are, as a rule, very bad and produce most pernicious effects. From the Otago diggings, for example, numbers of persons were constantly sent to the Lunatic Asylum at Dunedin, the principal cause of lunacy being the use of adulterated drinks.

In order, however, that any effectual analysis may be made, it will be necessary that the Colonial Laboratory should be supplied with additional apparatus, of which a list is appended to this report.

Your Committee desire to draw special attention to the facilities which the Colonial Laboratory affords for effecting analyses. In England analyses such as those ordinarily undertaken by Dr. Hector are very costly, the average prices being stated in a memorandum attached to this report.

In conclusion, the Committee desire to express their acknowledgments to Dr. Hector for the assistance and valuable suggestions he has given to them upon this branch of the inquiry.

29th July, 1870.

WM. THOS. LOCKE TRAVERS,  
Chairman.

## MINUTES OF EVIDENCE.

Dr. Hector in attendance, and examined.

1. *Chairman.*] You received, I believe, certain samples of articles of food and liquors from the Inspector of Police for the purpose of analysis?—I did. I have written out a memorandum, giving the results of such analysis in each case, and also of the weights of loaves of bread which were tested by me. (Memorandum attached.) There are many other common articles of food, such as butter and pickles, which were not submitted to me, and which I think might be largely adulterated. The probability of bad results ensuing from adulteration is greatly increased by the fact that the operator is generally an unqualified person, ignorant of the natures of different drugs.

2. Can you make any suggestions on the subject of the further analysis of samples?—I think that the whole thing requires to be gone into in a more leisurely and complete manner. I would suggest that samples of articles of food and liquors be obtained from all the Provinces and submitted to the Government Analyst. This collection of samples should be as complete as possible, and great care should be taken in obtaining, packing, and forwarding them. They should be sent in carefully cleaned and dried glass-stoppered bottles, and should be sealed by the person to whom the report is to be made. Each package should be distinguished by a letter or mark signed and dated by the sender. I will furnish the Committee with a list of the quantities which will be required of each article. (List attached.) I would state that at present the Government Laboratory is inconveniently crowded, and that, should these suggestions be carried out, increased accommodation would be required, and also that about £67 would have to be expended by the Government in obtaining the necessary apparatus and appliances, which must be specially reserved for this purpose. I submit a list of the articles that would have to be bought. (List attached.)

3. Have you any observations to make on the subject of weights and measures?—I would remark that there is at present no proper accommodation at the Museum for the Weights and Measures Department, and no one whose business it is to give their attention to this department. I believe that the importation and sale of gasoline is under the supervision of the Inspector of Weights and Measures. I would suggest that gasoline is an exceedingly dangerous article, and I have reason to believe that it is being sold in New Zealand.

Mr. F. Atchison in attendance, and examined.

4. *Chairman.*] You are Inspector of Police for the Province of Wellington?—I am.

5. Acting on a conversation I had with you at your office, what steps did you take?—On Thursday last I directed Sergeant Monaghan to obtain samples of various articles of food and drink for analyzation; at the same time I impressed upon him the necessity for secrecy in carrying out those instructions. He was to procure samples of various articles, which would be numbered, and the date on which and the name of the person from whom purchased registered, after which, they would be sent to the Colonial Museum for the purposes of analyzation, bearing a number only.

6. Have you a list of the articles so purchased?—I have, [list produced] but it does not state the quantities: they were mostly small.

7. Have you seen a paragraph which has appeared in the local papers?—I have, but I think all the samples were procured prior to its appearance.

8. Did you give any information to the papers respecting this matter?—I did not.

9. *Mr. Waring Taylor.*] The Sergeant is well known, is he not?—Yes, but it was imperative to send a trustworthy man.

10. *Mr. Macfarlane.*] Was the Sergeant in uniform?—I do not know.

Mr. Commissioner Branigan in attendance, and examined.

11. *Chairman.*] You are Commissioner of Armed Constabulary?—I am.

12. You have had a good deal of experience in matters connected with weights and measures?—I have, from having had to carry out the law.

13. What is your opinion of the present law?—I am of opinion that it requires to be considerably simplified, and that power should be delegated to some one person in the Colony as a general head. There should be, as in Ireland, a colonial standard with which all standards and sub-standards should be compared and issued to the various Provinces under the supervision of the general head referred to, and I think it would be highly beneficial if the administration of the law with respect to weights and measures were left in the hands of the police. I may state that this is done in Victoria, and that I was just getting the system into work in Otago when I left. The system carried out in Ireland is as follows:—By the 5 and 6 of William IV., c. 63, sec. 19, it is enacted that as many copies as may be requisite of the Imperial standard weights and measures shall be provided in each county or city or town. The custody of the county standards is in the County Inspectors of Weights and Measures appointed by the Grand Jury under the Act above cited. The same Act empowers the Grand Jury to name a Sub-Inspector of Constabulary, subject to the approval of the Inspector-General, who shall be charged with the duty of comparing the sub-standards with the county standards, and of adjusting and stamping such sub-standards, and to these duties his powers under the Act are exclusively limited. He has nothing, therefore, to do with the weights and measures of traders. This comparison is made once in the year at least, and at such other times as the County Inspector of Constabulary or the Justices in Petty Sessions shall require. The Act above cited also empowers the County Inspector of Constabulary to name (subject to the approval of the Magistrates) one or more head or other constables in each Petty Sessions

District to be *ex officio* Inspectors of Weights and Measures within such district. The duties of the *ex officio* Inspectors are the same as those of any other Inspector of Weights and Measures, with the exception that they have not the power of adjusting and stamping with the county stamp. They have no power, therefore, to stamp the weights and measures of traders, and they have to confine their attention to the detection and punishment of fraud, and to affording the honest trader reasonable facilities of verifying the weights and measures which he has in use by comparison with the sub-standards.

14. Then you are of opinion, judging from the working of the scheme in Victoria and Otago, that it would conduce to the effective carrying out of the law if the police were appointed to the offices of Inspectors of Weights and Measures?—I am.

15. Do you think that adulteration in articles of food and drink is common in the Colony?—I do, particularly of the latter, and more especially on the gold fields. From this cause numbers of lunatics are annually sent down from thence and the out-districts of the Colony. I know this from my experience on the gold fields of Victoria and of Otago, and I believe it also exists at the Thames.

16. Do you know of any steps being taken by the Provincial Governments in those cases to check the evil?—I do not. The great difficulty the Government have to contend with on the gold fields is the absence of competent analysts.

17. The Committee are desirous of obtaining samples of goods, &c., vended in other Provinces, for the purpose of analyzation: have you power over any of the Inspectors in the various Provinces, besides that of Auckland, to instruct them to carry this out?—I have not; but I have no doubt that, upon my communicating with them on the subject, they will do so.

Mr. J. H. Marriott in attendance, and examined.

18. *Chairman.*] You are Inspector of Weights and Measures in Wellington?—I am.

19. Do hold your appointment under the present Act?—I do.

20. How frequently do you make inspections of the weights and measures in use?—I make a general inspection once or twice a year, when I have invariably found the weights over the standard.

21. Did the persons send their weights to your office to be examined and compared?—I have been in the habit of taking the standard weights to the shops of persons, and comparing their weights with them there.

22. Are you aware that it is contrary to the provisions of the Act to remove the weights from your office?—I am not.

23. Do you keep a book in which the results of such examinations, and the respective dates, are registered?—I have a book in which the results of examinations of weights sent to me are recorded, but I do not keep any record of examinations made by me at the shops of parties.

24. Have you ever made any reports to any one?—I have, once or twice, by request of the Superintendent, sent in reports, but there has not been any made for five or six years.

25. Have you made any report since the last Act?—I have not.

26. *Mr. Macfarlane.*] Were the visits to the shops, of which you speak, made of your own accord and without notice?—Yes.

27. *Mr. Bunny.*] How do you visit; do you take each shop in regular rotation, or irregularly?—I begin at one end of the town, and visit the shops in succession.

28. *Mr. Waring Taylor.*] Then it would be easy for the person so visited to inform his neighbours that you were coming?—It might be so, but I do not think they would do it.

29. *Mr. Bunny.*] Are you Inspector for the whole Province?—No; but I have been requested to go to Wanganui, to inspect the weights and measures there.

30. What is your salary?—I have £50 per annum, voted by the Provincial Council.

31. Within what radius do you consider your duties to be confined?—Within the City, the Hutt, or Porirua; but I have not visited the Hutt for the last two years, nor have I visited stores in Porirua beyond Johnsonville.

32. *Chairman.*] Are you aware that, by the 22nd clause of the Act, it is prohibited to take the weights out of your office?—I am not, but I do not allow them to go out of my own hands.

33. Are you aware that you could compel persons to bring their weights and measures to you for examination?—I am, but I do not think it would be courteous to do so; besides, it would cause some inconvenience, as in many cases persons have only one set of weights.

34. Have you entered into a bond for the performance of your duties?—I have not.

35. What is done with the fees received by you?—They are paid in by me to that account.

36. Have you read the new Act?—I have not.

## A P P E N D I X.

## No. 1.

Mr. F. ATCHISON, Inspector, to JAMES HECTOR, Esq., M.D.

SIR,—

Police Office, Wellington, 12th July, 1870.

I have the honor to inform you that I have been requested by the Chairman of the Select Committee on Weights and Measures and Adulteration of Food to obtain samples of the different kinds of food and spirituous liquors, and to forward the same to you for the purpose of analysis. In consequence thereof, I have caused to be obtained thirty-four samples of groceries, sixteen samples of liquors and beers, and six loaves of bread, and which were forwarded to the Museum yesterday.

I have, &amp;c.,

James Hector, Esq., M.D., Museum, Wellington.

FREDERICK ACHISON, Inspector.

## Enclosure.

## GROCERIES.

1. Tea.	7. Sugar.	13. Sugar.	19. Sugar.	25. Coffee.	31. Tea.
2. Coffee.	8. Tea.	14. Coffee.	20. Pepper.	26. Pepper.	32. Coffee.
3. Sugar.	9. Mustard.	15. Tea.	21. Tea.	27. Tea.	33. Pepper.
4. Tea.	10. Sugar.	16. Pepper.	22. Sugar.	28. Sugar.	34. Sugar.
5. Sugar.	11. Tea.	17. Tea.	23. Coffee.	29. Coffee.	
6. Pepper.	12. Coffee.	18. Coffee.	24. Pepper.	30. Pepper.	

## WINES AND SPIRITS.

1. Pale Brandy.	5. Port wine.	9. Old Tom.	13. Nelson ale.
2. Rum.	6. Irish whiskey.	10. Sherry.	14. Wellington Brewery Co.
3. Port wine.	7. Rum.	11. Claret.	15. Staples' do.
4. Scotch whiskey.	8. Gin.	12. Scotch whiskey.	16. Edmeades' do.

## BREAD.

1. 2lb. loaf, 4d.	3. 2lb. loaf, 3d.	5. 2lb. loaf, 4d.
2. " " 4d.	4. " " 4d.	6. " " 4d.

## No. 2.

RESULTS of ANALYSES of Articles forwarded by Inspector ATCHISON.

COFFEE.—Eight samples :—

No. 2 contains a quantity of some highly coloured substance other than pure coffee, probably chicory.

No. 12 is a very pure coffee ; certainly contains no chicory.

No. 14 resembles No. 2.

No. 18 is very much adulterated.

No. 23 is nearly pure.

Nos. 25 and 29 are very poor in coffee ; in fact, they ought to be called by some other name, with coffee for an adulteration.

No. 32 is much adulterated.

These coffees have not yet been examined under the microscope.

TEAS.—Nine samples :—

Nothing detected so far, but the examination is not completed except so far as concerns the small dealers.

PEPPERS.—Seven samples :—

Not examined, particularly as they are rarely adulterated.

MUSTARD.—One sample :—

Nothing but farinaceous matter and turmeric.

SUGARS.—Nine samples sent ; seven white and two brown sugars.

Nos. 3, 10, 19, 5, and 22 dissolve completely in cold water ; solution, colourless and transparent.

No. 7 contains a little dust, but is the sweetest of the white sugars ; solution, colourless and transparent.

No. 28 is altogether inferior, containing dust and dirt ; solution, colourless and transparent.

No. 13 is a clean brown sugar, about as sweet as No. 7.

No. 34 (brown) contains pieces of flax, &amp;c., probably derived from the bags it is packed in ; it is the sweetest sugar of the whole number.

None of these samples contain any additions which could have been made to increase the weight ; they are merely varieties in quality.

The samples sent were too small (one only weighing  $7\frac{1}{2}$  grammes). The usual "scientific" adulteration of sugar consists of water, and, therefore, the samples ought to have been placed in sealed bottles, and forwarded directly after collection.

REPORT OF THE COMMITTEE ON

Wines and Spirits.—(Twelve Samples.)

In the Subjoined table water at 60° Fahr. is taken as 1,000; absolute alcohol at 60° Fahr. as 793·8.

No.	Name.	Specific gravity.	Alcohol.	Remarks.
1	Brandy	920·246	49 to 50	Sp. gr. a great deal to high (acid).
2	Rum	930·197	43 to 44	
3	Port Wine	1016·724		
4	Scotch Whiskey	930·530	44 to 45	Sp. gr. too high (acid).
5	Port Wine	1048·212		
6	Irish Whiskey	950·072	34 to 35	
7	Rum	934·9	42 to 43	This alcohol is not correct, the sweetening in Old Tom raising the sp. gr.
8	Gin	944·26	37 to 38	
9	Old Tom	952·73	33 to 34	
10	Sherry	980·624		Acid.
11	Claret	995·244		Acid.
12	Scotch Whiskey	942·430	39 to 39	

For want of proper apparatus it is impossible to determine the exact materials with which the above are adulterated.

Beer.

Samples from Bellamy's contain :—  
No. 1. Nil.  
No. 2. Nil.  
No. 3. Nil.  
No. 4. Has been adulterated with *cocculus indicus* and *nux vomica*.  
No. 5. Nothing of a deleterious nature detected.

Bread.

The six "two-pound" loaves of bread submitted by the Inspector of Police on the 11th instant, on being tried by the Government standard weights, gave the following results :—  
No. 1 ... 1oz. short weight.  
No. 2 ... 1oz. 13dwts. short weight.  
No. 3 ... 7dwts. short weight.  
No. 4 ... 1oz. 1dwt. short weight.  
No. 5 ... 2oz. over weight.  
No. 6 ... 1oz. 8 dwts. short weight.  
12th July, 1870. JAMES HECTOR.

No. 3.

MEMORANDUM in further reply to Questions by the Chairman.

THE following quantities of the various substances mentioned should be sent to the Laboratory when an analysis is desired :—  
1. Beer in bulk, 2 quarts; beer bottled, 2 bottles as sold.  
2. Wines and spirits in bulk, 1 pint; wines and spirits bottled, 1 bottle as sold.  
3. Coffee,  $\frac{1}{2}$  lb.; or, if made up, 1 packet as sold.  
4. Tea is hardly worth sending, as it is rarely adulterated except in China.  
5. Sugar,  $\frac{1}{2}$  lb., carefully weighed and sealed up in a close glass stoppered bottle to guard against loss of moisture.  
6. Pickles, 1 bottle. There is a strong temptation to the injurious adulteration of these articles.  
7. Preserves of all kinds, 1 tin or package.  
8. Pepper, spice, &c.,  $\frac{1}{2}$  ounce.  
All articles should be sent officially, and sealed by the person to whom the report is to be made. Each package should be distinguished by a letter or mark, signed and dated by the sender. All samples should be sent in carefully cleaned and dried, glass stoppered bottles.

Special List of Articles required at the Laboratory for the purpose of Analysis in relation to the Adulteration of Food, &c.

	£	s.	d.
Powerful microscope (with polarizer)	15	0	0
Liebig's condenser	3	10	0
Potash bulbs	1	5	0
Chloride calcium tubes	0	10	0
Combustion tubing	1	0	0
Combustion furnace (Hoffman's)	4	10	0
Aspirators	2	0	0
Double-action air pump	11	0	0
Burettes (at least six of uniform size)	3	0	0
Sp. Gr. bottles	2	0	0
Chemical watch glasses and clips	1	0	0
Glass cylinders on feet	1	0	0
Nitrogen tubes	1	0	0

	£	s.	d.
Hard glass beakers (special quality) ... ..	1	0	0
Platinum dishes (2) ... ..	4	0	0
Platinum crucible ... ..	2	0	0
Copper water cupboard (for drying at 212°) ... ..	2	10	0
Water bath ... ..	2	10	0
Berlin evaporating dishes } ... ..	3	0	0
Berlin crucibles }			
Thermometers ... ..	0	0	0
Barometer ... ..	0	0	0
Bulb tubes ... ..	1	0	0
U Tubes ... ..	1	0	0
Glass dishes ... ..	1	0	0
2 cells Bunsen's or Grove's Battery ... ..	0	0	0
Special quality corks ... ..	0	10	0
Swedish filter paper ... ..	0	10	0
Glass tubing ... ..	1	0	0
	£67	5	0

The following is the scale of charges for analyses in London:—

Complete organic analysis, £15 15s. to £21.

Partial organic analysis, £3 3s. to £5 5s.

Complete inorganic analysis, £5 5s.

Determination of a single element which is indicated, 10s. 6d.

Qualitative analysis, £1 1s.

The difference of cost is partially due to the extra time and delicacy of the operation in the higher analyses, but chiefly the greater expense of the re-agents. The expense of these would, of course, be much increased in this country.

Analyses for the detection of adulterations in food belong to the class of "partial organic analyses."

I have, &c.,

JAMES HECTOR.

#### No. 4.

[TELEGRAM.]

Hokitika, July, 1870.

FOUR informations laid against coal merchants here for selling by measure contrary to law, and defrauding their customers at the rate of four hundredweight per ton. Cases proved, and merchants fined 10s. each in two cases, and two dismissed on the ground of its being illegal to lay more than one case of fraud per diem. Gross frauds committed in the coal trade here. The highest penalty has been 10s. Full particulars of working of department next mail.

DAVIS, Inspector.

#### No. 5.

##### THE MANUFACTURE OF DRINKS

(To the Editor of the "Otago Daily Times.")

SIR,—London is the place, in particular, where men can satisfy their wants, reasonable or unreasonable, good or bad, if they have money at their command. Their consumption of crack drinks is so enormous that it is said they consume more than are made. Where does the rest come from? From the chemical works and stores in the chief centres of population in Spain, France, England, &c. These draw towards them the surplus produce of the drinks in the world for redistribution and consumption. By mixing and compounding them, the quality of most is improved, and the character of many is changed—*e.g.*, black current wine into sweet port; fine old silent spirit into cognac brandy, Hollands gin, &c. Superior wines of one class are changed into crack wines of another class; superior to extra, fine to superior, middling to fine; but middling to middling and so on; while inferior sorts and cider, perry, &c., are made to be, or appear to be, full-bodied, palatable wines, of sorts. Sugar, fine silent spirit, perfumes, and other harmless items, are the needful only for these transmutations. Some may be dubious of this who daily use beet sugar, which they could not use if it had not undergone the process of being deodorized. Wines so treated and so compounded are palatable, and less or more nutritious, and harmless as the beet sugar. From this source arises the abundance of palatable wines, and some other drinks.

The supplies of other flavoured and coloured drinks are extensive from these great centres of population to which Russia, the Indies, and other countries, send their millions of gallons of arrack, &c., 5 to 10 o.p., at 1s. to 1s. 3d. per gal. Ceylon's annual supply to Britain is from 40,000 to 80,000 gallons. France distils millions of gallons of a like spirit it calls brandy, from mangold wurzell, beet, potatoes, and some grapes. These spirits are not poison if taken in small quantities, though generally unpalatable and unsalable entire. In the hands of the chemist some of their supposed noxious qualities may be removed or hid. Imitations of any kind of drink—ale and whiskey excepted—are made. Some of these imitations are so perfect as to pass with experts as the real Simon Pure, if the brand on the cask affirm their judgment; but the quality of the spirit, like turpentine or naptha, remains. Second-hand casks with known brands sell at a premium in large cities. This work is performed

in bond, and the imitations, with the genuine, are sold on the mart by sample. Buyers, even when every care is taken, may become owners of the spurious imitations. They must buy to suit their customers, amongst whom are the buyers and vendors of low-priced imitations themselves, also unconscious of, and equally indifferent as to, their origin, to which they add various substances to give flavour and warmth, qualities which drinkers appreciate. The consequence is increased thirst, which, if yielded to, excites the passions, ending in a heavy sleep, followed by a terrible feeling of lassitude and horror, which is partially removed by a "hair of the dog that bit them." Indulgence in the best of liquors, as in the best of meats, is followed by evil consequences.

If the drinks are made, and especially if drugged, that evil is terrible. The sale of the former cannot be prevented; the latter may, and it is the duty of every Government to interfere and prevent their sale. When Major Richardson was Superintendent of this Province, I brought the subject under his notice, and further stated that liquors which had been refused by the Melbourne analyst admission into that port, were afterwards received and sold in this. I understood he took a personal interest in the subject, but his executive, or advisers, demurred to the cost of the appointment of an analyst; and, besides, such an appointment required the assent of the General Assembly. The Major was shortly after succeeded in office by Mr. Harris. I broached the matter to him, but whether verbally or in writing I do not remember. He approved of such an appointment, but soon retired from office. The matter was then allowed to sleep, and was recalled to my mind by letters and discussions in the newspapers lately about doctored drinks. I think I am warranted in stating, if the means had been used to prevent their sale ten years ago, that the Province would have saved 25 per cent. on police dues, and 50 per cent. on our jails, lunatic asylums, hospitals, &c., while our streets and country would have shown a like percentage less of poor misguided men and women, the profit of whose labour is lost to themselves and the public. This misery and cost will increase until the Government appoint an analyst, with assistants, to inspect liquors imported and on sale. The drugs mixed in drink by a dealer or retailer for immediate consumption, are much more damning, but are easily detected, while the wholesale business requires skill and time to analyze their compounds. There has been some talk of appointing officers of excise. They should be chemists, and be empowered to test as well as gauge, and search for and seize P.D. on owners' premises he has no use for in his lawful business. The excise laws at home 45 years ago did not allow certain traders to have on their premises certain P.D. under a penalty of £200. It will be profitable for the dealer, retailer, and brewer, and the public, to take such interest in this matter as will induce the Government to protect the honest trader and the public in full—if not in full, at least as much protection against the evil complained of as is enjoyed by the public in Melbourne.

I have, &c.,

WM. DALRYMPLE.

Port Chalmers, 20th June.