

SESS. II.—1879.
NEW ZEALAND.

REPORT OF COLONIAL ANALYST, CHRISTCHURCH,

FOR YEAR ENDED 31ST MAY, 1879.

Presented to both Houses of the General Assembly, in accordance with Section 10 of "The Sale of Food and Drugs Act, 1877."

REPORT.

IN connection with the office of Colonial Analyst for the City of Christchurch, fifty-two analyses have been made during the past year, comprising the following articles:—

	Samples.
Bread	32
Milk	10
Water	3
Alum	1
Sherry	1
Spirit	1
Beer	1
Examinations for blood	3

The detailed results of these analyses are shown in the appended reports. Two prosecutions have been instituted with regard to bread found to be adulterated with alum, resulting in one conviction, the other case being dismissed, owing to proof having been adduced that the alum was introduced without the defendant's knowledge. One conviction has also been obtained for having alum in possession.

These informations were laid under the Bakers and Millers Act, in consequence of the samples having been purchased by the police, and not by the Inspectors, as required by the terms of the Sale of Food and Drugs Act. No samples for analysis whatever have been received from the Inspectors of Nuisances and Weights and Measures.

I would take this opportunity of drawing the attention of the Government to the great difficulty experienced in the successful working of the Act in its present form, with regard to the collection of samples.

Clauses 9 and 12 state that it is necessary that the article to be analyzed should be either purchased or received by the Inspector of Nuisances or by the Inspector of Weights and Measures, and then only provided reasonable cause be had to suspect that such articles are adulterated.

No provision whatever is made in the Act by which the sale of any article might be demanded for the purpose of analysis. In the working of "The Adulteration of Food Act, 1866," samples were collected by the police by a system of raids; and I believe, judging from the diminution of the number of adulterated articles received, that this system almost entirely suppressed the practice of adulteration in Christchurch, or, at any rate, to a very great extent. That such is not the case at present might be inferred from the evidence brought forward at the last meeting of the Licensing Commissioners, and which is referred to in the following slip, taken from the *Press* of 3rd June, 1879:—

"Adulteration of Liquor.—During the hearing of an application for the renewal of an hotel license yesterday, in the Licensing Court, the Commissioners took the opportunity of expressing a very decided opinion on the urgent necessity of the police having the power of causing an analysis to be made of the beverages sold in some of the city hotels. In the case in question both the Chairman and the Inspector of Police cited more than one instance in which a glass of ale sold was of so deleterious a nature as to show that it must, accidentally or otherwise, have been adulterated with some noxious drug. The Chairman regretted that no steps could have been taken at the time to test the purity of the beer, and Inspector Hickson said the police were powerless to interfere for the public good. A very severe caution was administered by the Bench to the applicant, and they trusted that the publicity which would be given by the local press to the case would have a beneficial effect for the public good."

I have often received complaints of adulteration ; but the informers have always been adverse to taking the necessary action in the matter, as required by the Act. This is also borne out by the fact that not a single sample has been received through the Inspectors during the past year ; and I am very strongly of opinion that the Act would be much more beneficial if it gave power to the police to enforce the sale of articles, as, from their superior knowledge of the reputation of the publichouses, &c., they are in a much better position to detect offenders than the Inspectors could ever possibly be.

A knowledge of the fact that the police possess power to purchase articles for analysis would of itself, I believe, have a very beneficial effect. This opinion is confirmed with regard to the adulteration of bread. Formerly this appears to have been a very common practice here ; whereas at the last raid made by the police, out of twenty samples not one was found to be adulterated.

Clause 13 of the Act requires amendment, so as to provide that the article received should be divided into two portions, one of which should be retained by the collector, as it often occurs that none of the sample is left after analysis, in cases where a small quantity only is received. In the event of the present Act remaining in force, it might be made much more efficient if orders were issued to the police to act as informers to the Inspectors, who would then be able to take action on such information. The amendment of the Act, however, would be much more satisfactory.

Canterbury College Laboratory,
3rd July, 1879.

A. W. BICKERTON,
Colonial Analyst.

REPORT ON the ANALYSIS of TWELVE SAMPLES of BREAD received from Constable STEPHENSON,
14th October, 1878.

Laboratory numbers	...	324	325	326	327	328	329	330	331	332	333	334	335	
Numbers on samples	...	132	133	134	135	136	137	138	139	140	141	142	143	
Water, per cent.	...	43.14	41.84	44.34	40.43	36.33	41.09	43.86	40.96	41.42	40.49	39.33	40.61	
Ash, per cent.	...	1.05	1.01	.71	1.11	1.09	.57	.97	.72	1.18	1.07	.58	.58	
Sulphuric acid	...	Trace	Trace	Trace	Small amount	Trace	Trace	Trace	Trace	Trace	Trace	Trace	Trace	
Alum, by Horship test	...	Nil	Nil	Nil	Very strong indications	Nil	Indications	Nil	Nil	Nil	Nil	Nil	Nil	
Alumina, by fusion with sodium	...	...	...	Nil	Considerable quantity	...	Small quantity	...	...	...	...	...	...
Copper and iron	Absent in all cases.						
Reaction of aqueous infusion	All acid.						
Reaction of ash	All alkaline.						
Weight of loaves, as determined by police	...	1lb. 15½oz.	No scales	2lb. 1oz.	1lb. 13oz.	1lb. 13oz.	1lb. 15oz.	2lb.	2lb.	2lb.	1lb. 14oz.	2lb.	2lb.	

The general character and make of these samples of bread, taken as a whole, are very satisfactory ; and the above analyses point to the fact that, with the exception of Nos. 327 and 329, they are unadulterated. There is strong evidence that potatoes have been used in all cases, but in none of them in quantities sufficient to be considered as an adulteration. The samples Nos. 327 and 329 have been adulterated with alum, the former to a considerable extent.

Canterbury College Laboratory, 17th October, 1878.

A. W. BICKERTON,
Analyst.

REPORT ON THE ANALYSIS OF TWENTY SAMPLES OF BREAD RECEIVED FROM CONSTABLE H. BEAUMONT, 19th May, 1879.

	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382
Laboratory numbers	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Marks on samples	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164
Water, per cent.	42.71	42.50	41.80	40.50	39.71	38.47	40.20	39.60	40.76	41.66	40.39	38.46	38.70	40.76	38.84	38.42	41.95	41.97	42.08	41.92
Ash, per cent.	1.16	1.30	1.15	.86	1.27	1.28	.91	.62	1.00	.65	.73	.65	.64	.98	1.95	.65	.95	1.13	1.02	.87
Reaction of ash	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Alum (Horship test)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sulphuric acid	Small amount	Small amount	Trace	Trace	Trace	Small amount	Trace	Trace	Small amount	Small amount	Small amount	Small amount	Trace	Small amount	Trace	Trace	Trace	Small amount	Small amount	Trace
Copper and iron	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Reaction of aqueous infusion	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Physical characteristics	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Weight of loaves	2lb.	2lb.	2lb.	2lb.	2lb.	2lb.	2lb.	1lb. 15oz.	1lb 15½oz	1lb. 13oz.	2lb.	1lb. 15oz.	2lb.	2lb.	2lb.	2lb.	2lb.	2lb. 14oz.	2lb. 13oz.	2lb.

All alkaline.

Absent in all cases.

Absent in all cases.

All very slightly acid.

Normal in all cases.

The above analyses prove these samples of bread to be unadulterated.

Canterbury College Laboratory, 27th May, 1879.

A. W. BICKERTON,
Colonial Analyst.

REPORT on the ANALYSIS of TEN SAMPLES of MILK received from Constable STEPHENSON,
1st October, 1878.

Laboratory numbers	312	313	314	315	316	317	318	319	320	321
Marks on samples	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10
Specific gravity at 62 deg. F.	1·032	1·032	1·029	1·029	1·031	1·032	1·027	1·031	1·029	1·030
Total solids, per cent.	12·14	12·58	11·50	11·28	12·04	12·44	11·62	12·02	11·78	11·88
Cream, per cent.	7·0	10·0	7·0	7·5	7·5	8·0	8·5	9·0	8·5	8·5
Ash, per cent.	·64	·58	·52	·46	·56	·60	·52	·60	·54	·50
Abnormal Physical Characteristics	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil

The above analyses prove these samples of milk to be of a good average quality. No. 2 appears to be the best, and No. 4 the poorest sample.

Canterbury College Laboratory, 7th October, 1878.

A. W. BICKERTON,
Analyst.

REPORT on the ANALYSIS of THREE SAMPLES of WATER received from the LOCOMOTIVE
ENGINEER, Christchurch, 19th November, 1878.

Sample marked "Ngapara" (Laboratory No., 341).

Physical examination: Appearance, clear; taste, good, slightly of vegetable matter; smell, nil. Chemical examination of dissolved solids: Reaction, neutral; lime, present, considerable amount; chlorine, present, moderate amount; sulphuric acid, present, considerable amount; nitric acid, present, small amount; nitrous acid, trace; ammonia, present, small amount; iron protosalts, nil; iron persalts, nil; sulphuretted hydrogen, nil; magnesia, present, moderate amount; phosphoric acid, trace; silicic acid, present, small amount; organic matter, present, small amount. Quantitative results: Hardness, total, 50·75 parts per 100,000; permanent, 47·15 parts per 100,000; temporary, 3·60 parts per 100,000; total solids, 108·40 parts per 100,000, or 75·88 grains per gallon.

Sample marked "Windsor" (Laboratory No., 342).

Physical examination: Appearance, hazy; taste, rather flat; smell, rather unpleasant. Chemical examination of dissolved solids: Reaction, neutral; lime, present, moderate amount; chlorine, present, moderate amount; sulphuric acid, present, considerable amount; nitric acid, nil; nitrous acid, nil; ammonia, present, small amount; iron protosalt, nil; iron persalt, nil; sulphuretted hydrogen, nil; magnesia, present, small amount; phosphoric acid, nil; silicic acid, present, small amount; organic matter, present, considerable amount. Quantitative results: Hardness, total, 42·70 parts per 100,000; permanent, 38·58 parts per 100,000; temporary, 4·12 parts per 100,000; total dissolved solids, 112·40 parts per 100,000, or 78·68 grains per gallon.

Sample marked "Teaneraki" (Laboratory No., 343).

Physical examination: Appearance, hazy, considerable amount of suspended matter; taste, bad; smell, very unpleasant. Chemical examination of dissolved solids: Reaction, neutral; lime, present, small amount; chlorine, present, moderate amount; sulphuric acid, present, moderate amount; nitric acid, nil; nitrous acid, nil; ammonia, present, small amount; iron protosalt, nil; iron persalt, nil; sulphuretted hydrogen, nil; magnesia, present, considerable amount; phosphoric acid, nil; silicic acid, present, small amount; organic matter, present, considerable amount. Quantitative results: Hardness, total, 23·74 parts per 100,000; permanent, 22·10 parts per 100,000; temporary, 1·64 parts per 100,000; total solids, 75·80 parts per 100,000, or 53·06 grains per gallon.

Inferences.

From the above analyses it will be seen that, owing to the rather high proportion and nature of the solids contained in them, these samples of water cannot be recommended as possessing first-class qualities for boiler purposes. The Ngapara water appears to be the least suitable, and the other two about equal.

None of the samples are worse than such as are frequently used, but they are much inferior to those formerly analyzed, and should be avoided if better can be obtained.

As drinking waters, none of them possess good indications.

Canterbury College Laboratory, 4th December, 1878.

A. W. BICKERTON,
Colonial Analyst.

REPORT on the ANALYSIS of a WHITE POWDER received from the POLICE, 17th October, 1879.

HAVING examined the powder received from the police, 17th October, 1878, I find it to consist of common alum.

Canterbury College Laboratory, 17th October, 1878.

A. W. BICKERTON,
Colonial Analyst.

REPORT on the ANALYSIS of a SAMPLE of SHERRY (supposed to be spurious) received from Mr. J. JONES, 19th October, 1878.

THE sample of sherry received from Mr. J. Jones, having been analyzed, was found to contain 21 per cent. of alcohol by volume, which is a very good proportion for this class of wine. It is probably a real wine, or, if made, it most likely is from brandy, as there is a certain proportion of tannin contained in it; if not from brandy, most certainly from pure spirit. The wine is adulterated with a considerable quantity of alum, for the purpose of giving it a dry flavour. It is absolutely impossible that it could have been made from dry chemicals or mere essences.

Canterbury College Laboratory, 20th October, 1878.

A. W. BICKERTON,
Colonial Analyst.

REPORT on the ANALYSIS of a SAMPLE of SPIRIT received from the POLICE, 15th January, 1879.
 HAVING examined the sample of spirit received from Mr. Inspector Hickson, I find it to contain 45 per cent. of alcohol by volume.

Canterbury College Laboratory, 16th January, 1879.

A. W. BICKERTON,
 Colonial Analyst.

REPORT on the ANALYSIS of a SAMPLE of BEER (supposed to be adulterated) received from Dr. SYMES, 31st December, 1878.

SPECIFIC gravity at 62 deg. F., 1·0072; specific gravity after evaporation, 1·0189; alcohol per cent. (volume), 8; extract, 4·75; ash, ·30; colour of ash, white; taste of extract, bitter, no pungency; taste of alcohol, bitter, no pungency.

The appearance of this beer was slightly turbid, with a certain amount of residue. The taste alone did not indicate that it contained anything of an abnormal character. A microscopic examination of the residue revealed the presence of a very large number of yeast cells, together with a small portion of fibrous woody material, probably derived from the cask containing the beer. Particles of tobacco were specially looked for, but with negative results. The high percentage of alcohol points to a strong beer, but the presence of yeast cells shows that it has not been well made. There is no evidence to prove that it has been adulterated; the quantity received, however, did not allow of a very exhaustive analysis being made.

Canterbury College Laboratory, 16th January, 1879.

A. W. BICKERTON,
 Colonial Analyst.

REPORT on the EXAMINATION for BLOOD-STAINS on ARTICLES received from the POLICE, 5th August, 1878, in CONNECTION with the CASE of REGINA v. HOFF.

I HAVE examined both microscopically and chemically the following articles received from Sergeant Macdonald—namely, (1) axe-head, (2) cleaver, and (3) shingle-hammer—but can find no satisfactory evidence as to the presence of blood on them.

Canterbury College Laboratory, 5th August, 1878.

A. W. BICKERTON,
 Colonial Analyst.

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