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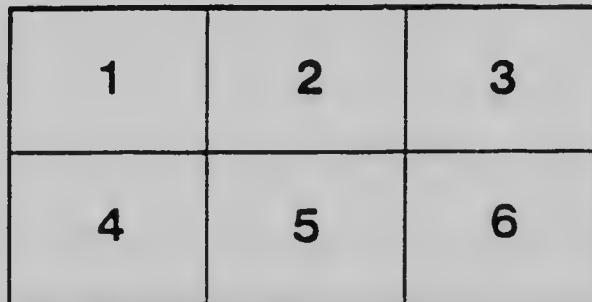
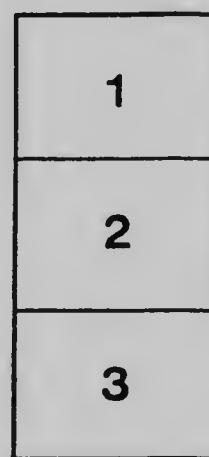
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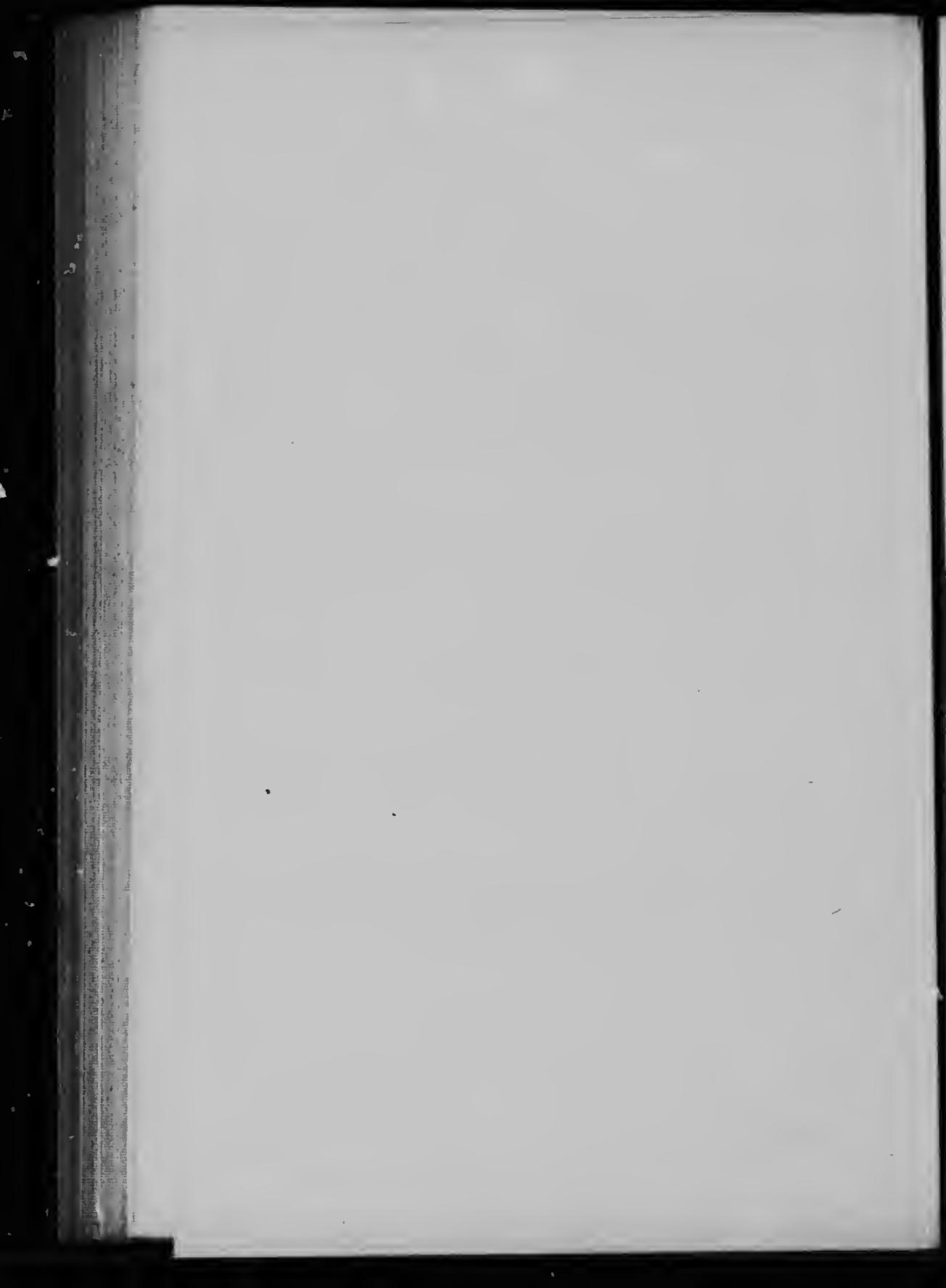
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O. H. M. S.

*B. J. Gerald*  
*Deputy Minister.*

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LABORATORY

OF THE

INLAND REVENUE DEPARTMENT

OTTAWA, CANADA

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BULLETIN No. 166

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Unfermented Grape Juice.

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LABORATORY  
OF THE  
INLAND REVENUE DEPARTMENT  
OTTAWA, CANADA.

BULLETIN No. 166.

Unfermented Grape Juice.

OTTAWA, December 3, 1908.

W. J. GERALD, Esq.,  
Deputy Minister of Inland Revenue.

SIR,—I beg to hand you a report upon a collection of 70 samples of Unfermented Grape Juice, made during July and August of this year. Sixty-eight of these samples were obtained in the usual way, by our inspectors; the remaining two samples were subsequently sent in by Mr. Inspector Dager of Toronto.\*

Two samples from St. Hyacinthe were received in spoiled condition by the analyst, and the following five samples appear to be fermented wines, and not grape juice :—

No. 29738—St. John, N. B., by Mr. Inspector Ferguson, contains 10·67 per cent of proof spirit, is labelled Unfermented Grape Juice. Pelee Island Wine and Vineyards Co., Brantford and Pelee Island.

†No. 32613—Montreal, by Mr. Inspector Costigan, contains 18·81 per cent of proof spirit, is labelled Unfermented Grape Juice, for Sacramental and Medical use. Expressed and bottled by Charles E. Scarff, Montreal.

No. 34604—St. Mary's, Ont., by Mr. Inspector Talbot, contains 24·69 per cent of proof spirit, is labelled Pure Canadian Grape Wine, and should not have been purchased or sold as Unfermented Grape Juice. Manufacturer as given by vendor is the Niagara Falls Wine Co.

No. 35342—Calgary, by Mr. Inspector Fletcher, contains 31·22 per cent of proof spirit, is labelled Gely's Non-Alcoholic Wine. Augusta Gely, Taragona, Spain. "This wine is produced from the pure grape juice only, and warranted free from any alcohol."

This is evidently intended to imply that no alcohol, as such, has been added to the wine. It should not have been offered as unfermented.

\*A specially collected sample, No. 32975, has been added since the above was written.

†The duplicate bottle of this sample contains only 2·34 per cent proof spirit.

No. 34313—Vancouver, by Mr. Inspector Power, contains 25·01 per cent. of proof spirit, is not labelled by the manufacturer. A written label, affixed by vendor (Woodward Dept. Stores, Vancouver), has the words "Unfermented Grape Juice." The article is a fermented wine. Vendor states it to be produced by the Ontario Grape and Wine Co., St. Catherines.\*

	P. c. proof spirit.
No. 29738. .... { Original.....	10·67
Duplicate.....	11·05
No. 32613. .... { Original.....	18·81
Duplicate.....	2·34
No. 34604. .... { Original.....	24·65
Duplicate.....	25·34
No. 34313. .... { Original.....	25·01
Duplicate.....	24·69

Of the remaining 63 samples, the following classification may be made, as regards their content of alcohol.

	Alcohol.	Samples.
None or trace so small as to be negligible .....		
Below 1 per cent proof spirit .....		51
Between 1 and 2 per cent proof spirit .....		1
" 2 and 3 " "		2
" 3 and 4 " "		1
" 4 and 5 " "		5
Above 5 per cent proof spirit .....		2
Total .....		1
		63

Eleven of these 63 samples contain salicylic acid as a preservative. It is interesting and important to note that, with two exceptions, those samples which contain salicylic acid contain very considerable percentages of alcohol; showing that the preservative has been added to the already fermenting juice, to stay further fermentation, and not to the fresh juice, in order to prevent fermentation from beginning. The following makes this plain:—

#### SAMPLES CONTAINING SALICYLIC ACID.

	Per cent proof spirit.
No. 33524 contains.....	4·12
No. 34402 " .....	0·00
No. 32611 " .....	2·09
No. 35274 " .....	3·03
No. 35141 " .....	3·30
No. 30978 " .....	3·03
No. 34588 " .....	3·30
No. 33192 " .....	4·89
No. 34312 " .....	5·74
No. A " .....	trace.
No. B " .....	0·70
No. 29738 " .....	10·67
No. 32613 " .....	18·81
No. 34313 " .....	25·01

\*Owing to the fact that the inspector purchases three bottles of each sample, which bottles are supposed to contain the same identical grape juice, although they may actually represent the product as manufactured at different times, it has been considered proper to determine the alcohol in the duplicate sample, as well as in that intended for the analyst. The results of both determinations, in the instances where such have been made, appear in the following table:—

4

Ten samples of grape juice, and one of wine, contain coal-tar dyes, as follows :—

No. 33524	Penrita, N. C. Polson.
No. 33194	" "
No. 34312	" "
No. 32611	Turner & Co.
No. 35274	"
No. 35141	"
No. 30978	"
No. 30952	Sterling, T. Lytle Co.
No. A	Toronto Wine Co.
No. B	" "
No. 29738	Pele Island Co.

It is worthy of note that most of the samples which contain dyes, contain a preservative also. Thus, of eleven samples (one being a wine) which are dyed, all but one (No. 30952) contain salicylic acid; while of fourteen samples which contain this preservative, all but four are dyed. (34402, 34588, 32613, 34313). Of these 32613 and 34313 must be regarded as fermented wines.

Under the heading *Extract*, are given two numbers; the first being the solids in solution derived from the specific gravity of the dealcoholized grape juice, as interpreted by Table II, published in Bulletin No. 59 of the Bureau of Chemistry, Washington. The second number, which is usually about 3 per cent less, is obtained by direct weighing of the wine solids, dried at 100° C. The table mentioned has evidently been prepared by drying the wine solids less completely than they are dried on asbestos, at 100° C.; and there can be little doubt that some change in the character of the solids results from employment of the higher temperature. Either set of numbers may be used in interpretation, but the two methods cannot safely be used interchangeably. The residue is essentially sugars, and it will be noted that in this unfermented juice the added cane sugar is quite as completely inverted as in a fermented wine. Cane sugar as such is present in traces only. The amount of residual solids ranges (in the unfermented grape juice) from 11 per cent (No. 32612) to 33·60 per cent. (No. 34403).

It is evident that this is due to the varying amounts of sugar added to the must by different makers; and a certain uniformity among samples of the same brand is observable. This is shown by the following examples :—

Brands.	No.	Dry Solids.	Proof Spirit.
St. David's Wine Co.—			
Imperial Brand.....	32612	11·00	1·16
"	35344	11·05	0·00
National Drug & Chemical Co.—			
National Brand.....	34403	33·60	0·00
"	35272	31·86	0·00
N. C. Polson—			
Penrita Brand .....	33524	27·85	4·12
"	33192	25·63	4·89
"	34312	25·15	5·74
Turner & Co., Toronto—			
Brand.....	32611	27·00	2·09
"	35274	26·93	3·03
"	35141	29·10	3·30
"	30978	28·06	3·03
Welch's Grape Juice Westfield, N. Y.—			
Brand.....	33521	18·36	0·00
"	33523	15·82	0·00
"	31307	16·67	0·00
"	31309	16·16	0·00

Brands.	No.	Dry Solids.	Proof Spirit.
Welch's Grape Juice, Westfield, N. Y.—Con. Brand.....	29741 29742 34402 34404 " 165 " 32615 " 22659 " 22660 " 22662 " 2271 " 31198 " 33196 " 33341 " 33343 " 33345 " 34310 " 34676 " 34976	16.51 16.70 19.90 13.78 16.56 14.86 15.44 16.06 15.21 16.30 16.47 16.37 16.50 11.57 16.20 22.01 16.80	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 1.25
Ontario Grape Juice Co., Niagara Falls— Ontario Grape Juice .....	31310	13.57	0.00
Noyes Ontario Grape Juice.....	31308 32614 34406 34660 35194 35142 35273 22658 " 167	17.00 17.81 16.53 17.25 14.22 14.50 17.02 14.71 14.89	0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.00 0.00
J. J. McLaughlin, Toronto.....	31308 29730 36139 30968 34311	20.84 19.14 20.04 19.80 20.55	0.00 0.00 0.00 0.00 0.00
Imperial Brand, Hagar Bros., Welland.....	35522 22661 35143 35195	17.56 16.58 18.22 17.00	0.00 0.00 0.00 0.00
La Société Anonyme, France.....	34314 34952 34964	17.80 19.25 18.60	0.00 0.00 0.00
Duffy's American Fruit Products Co., Rochester.....	34405 " 167	15.37	0.00
Toronto Wine Co.....	A B	12.48 39.15	trace 0.70
Ontario Grape Growing & Wine Mfg. Co., St. Catherines.....	35140 35270 34313	25.34 25.61 13.89	0.00 0.00 25.01
" " (Fermented wine).....			
Beach & Clairidge Co., Boston.....	29740	21.21	0.00
C. E. Scarff, Montreal. (This is a fermented wine).....	32613	7.08	18.81
Sterling Brand, T. A. Lytle & Co .....	30952	29.11	3.16
Niagara Falls Wine Co. (This is a fermented wine).....	34604	12.60	24.00
Jules Robinet, Sandwich.....	34588	23.98	3.30
Vineland Grape Juice Co., Vineland, N. J.....	33525	17.68	0.00
Augusta Gely, Taragona, Spain. (This is a fermented wine).....	35342	3.28	31.22
Pele Island Co. (This is a practicallly fermented wine).....	29738	28.70	10.67

The amount of extractive in our commercial unfermented grape juice varies, as we have seen, from about 11 to 33 per cent. König (Chemie der Menschlichen Nahr. und Genussmittel, Band I, S. 1342) quotes 13·5 to 18·9 per cent of extractive for French and German grape juice. Allen (Com. Org. Analysis, Vol. I, p. 77) gives the dry residue for wine must as from 11 to 27 per cent. J. Carter Bell (quoted by Allen) found 22·90 and 20·28 for black, English and white Almeira grapes. These figures, representing grape juice of European production, may not be available as enabling us to interpret results with American grape juices. Unfortunately I have no authoritative records for American grape juice; but it is highly probable that wherever the dry solids much exceed 15 per cent, sugar has been added to the grape juice. In such cases it is clear that the article should be labelled *Sugared Grape Juice*, as a simple statement of fact.

The ash of grape juice, as here illustrated, varies between wide limits, from 0·14 to 0·40 gramme per 100 cubic centimetres. It is very doubtful whether these extremes represent genuine juice. The large majority of the samples analysed yield about 0·20 to 0·30 of ash; and the normal percentage lies between these limits. Still more instructive is the alkalinity of the ash. Fruit juices, and especially the juice of the grape, contain potassium salts of organic acids, which burn to carbonates. The alkalinity of a true grape juice ash, is therefore high, and, so far as can be judged by the tabulated results, corresponds to about 25 cubic centimetres, deci-normal, per cent.

The natural inference in cases like Nos. 33524, 33192 and 34312, which give an alkalinity of 0·4 N-10 per cent is that we are not dealing with true fruit juice; or, if so, that it has undergone some quite unusual treatment. The same remark holds of the series of samples numbered 32611, 33274, 33141, 30978; also of No. 30952; and of the pair of samples 32612 and 35344. The same is true of samples A and B.

The acidity of ordinary grape juice appears to be about 1 to 1·5 per cent (as tartaric acid) and the volatile acids are trifling in amount. When the acidity is decidedly less than 1 per cent it is probable that we are dealing with a faultless juice. Foreign (European) grape juices may have a lower acidity, as illustrated by Nos. 34314 34952 and 34964.

Finally, it is to be noted that our inspectors obtain, in the case of each sample, three bottles of the grape juice; and these are known by the same number, and are assumed to represent the same article. They should give identical results on analysis, and if the just stated assumption were correct, they would do so. As a matter of fact, the contents of bottles bearing the same number sometimes prove to be very unlike. The results of analysis published herewith were obtained by work done upon the bottle especially intended for the analysis. A second bottle remains, under seal, in the hands of the vendor, while the third bottle is kept in this office, under seal, in the event of its being required under section 15 of the Adulteration Act. In a few cases, this third bottle has been submitted to analysis, and the following instances show how great differences may exist between articles of so-called unfermented grape juice, bearing the same number, and apparently having the same manufacturer. In explanation of the necessity of collecting three bottles, instead of dividing the contents of one bottle into three parts, I may say that where grape juice is preserved by sterilization, and without antiseptics, the fact of opening the bottle causes the certain alteration and destruction of the sample by fermentation. It is by reason of such treatment that samples 165 and 166 were received in unfit condition for analysis.

Number.	Proof Spirit. Per cent.	Extract.
32612.....	18.81	8.65
Duplicate.....	2.34	24.93
20734.....	10.67	32.00
Duplicate.....	11.05	33.57
34604.....	24.60	13.30
Duplicate.....	25.31	14.34
34313.....	25.01	18.15
Duplicate.....	24.60	17.92
30002.....	3.16	31.51
Duplicate.....	3.71	31.93
33192.....	4.80	27.75
Duplicate.....	5.01	27.63
33524.....	4.12	27.50
Duplicate.....	4.12	27.50
34312.....	5.74	27.10
Duplicate.....	5.74	27.10
35141.....	3.30	31.35
Duplicate.....	3.30	30.97
35274.....	3.03	29.57
Duplicate.....	3.00	30.02

Fifteen samples of unfermented grape juice were examined in this laboratory in 1902, and the results are published in Bulletin No. 82. Three of these contained above 2 per cent of proof spirit; and five preserved with salicylic acid. The addition of salicylic acid was held by the late chief analyst to be a violation of section 17 of the Adulteration Act. (4 c. of R. S. 1906).

The results of analysis now published will serve as material for the defining of unfermented grape juice; but to this end it is necessary that a considerable amount of work be done upon grape juice of known purity, and of Canadian production. The main points requiring elucidation are the following: (1) What is its normal content of dry solid matters? (2) of sugars? (3) What is the normal ash content? (4) Normal alkalinity of the ash? (5) What is the normal acid of Canadian grape juice?

It is hoped that these points may be cleared up during the next ~~first~~ season.  
I beg to recommend the publication of this report as Bulletin No. 166.

I have the honour to be, sir,  
Your obedient servant,

A. MCGILL,  
*Chief Analyst.*

## BULLETIN No. 166—

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher, as given by the Vendor.	Inspector's Report.
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## DISTRICT OF NOVA SCOTIA—

1908.							
Aug. 5	Unfermented Grape Juice.	33521	H. Wilson, Windsor, N.S.	1½ pts.	75	Welch Grape Juice Co., Westfield, N.Y.	Labelled Pure, from choice Concord grapes.
" 6	" ..	33522	Methodist Book Room, Halifax.	3 "	90	Hager Bros., Welland, Ont.	Labelled Imperial.
" 7	" ..	33523	C. A. Barnstead, Halifax.	1½ "	75	Welch Grape Juice Co., Westfield, N.Y.	Labelled Pure, from choice Concord grapes.
" 8	Peurita-Unfermented Wine.	33524	A. A. Thompson, Halifax.	3 qts. 1 05	N. C. Polson, Kingston, Ont.	Guaranteed free from alcohol.	Labelled "Peurita Unfermented Wine." The word "Grape" on separate label.
" 8	Unfermented Grape Juice.	33525	Jas. D. Walsh, Halifax.	3 pts. 1 20	Vineland Grape Juice Co., New Jersey.		

## DISTRICT OF PRINCE EDWARD ISLAND—

July 30	Unfermented Grape Juice.	31306	Johnson & Johnson, Charlottetown.	3 pts.	1 20	Ontario Grape Juice Co., Niagara Falls.	Labelled Pure Unfermented Grape Juice without any adulterant or preservative whatever, from selected grapes.
" 17	" ..	31307	J. G. Jameson, Charlottetown.	3 "	1 25	Welch Grape Juice Co., Westfield, N.Y.	From choice grapes, pure and unadulterated.
Aug. 3	" ..	31308	E. Keir, Kensington.	3 "	1 20	J. J. McLanghlin, Toronto.	From choice Canadian Concords, pressed and sterilized in laboratory.
" 4	" ..	31309	J. F. McNeill, Summerside.	3 "	1 05	Welch Grape Juice Co., Westfield, N.Y.	From choice Concord grapes, pure and unadulterated.
" 5	" ..	31310	G. E. Hughes, Charlottetown.	3 "	1 05	Ontario Grape Juice Co., Niagara Falls, Canada.	

## UNFERMENTED GRAPE JUICE.

## RESULTS OF ANALYSIS.

Spec. Grav. of juice, of Distillate.	Alcohol by Volume of Proof spirit. From Sp. Gr. of residue, Gms. per 100 cc.	Extract. From 48 hrs. drying in water oven, Gms. per 100 cc.	Acidity. Alkalinity of water solution, ash cc/10 Ash, Gms. per 100 cc.	Polarization. Total. Fixed Gms. per 100 cc. Volatile.	Sucrose by Clerget's Formula. Reducing sugar, Gms. per 100 cc.	Remarks and Opinion of the Chief Analyst.
1.0806 0.9999	None.	21.43 18.36 0.26	27.0 1.35 1.35 0.00	-27.0 -27.6	0.11 16.53	Contains no preservatives, dyes, &c.
1.0732 1.0000	"	19.60 17.55 0.23	22.20 97.0 94.0 0.03	-20.0 -23.6	0.67 15.09	"
1.0685 0.9998	"	18.34 15.82 0.26	26.0 1.44 1.41 0.03	-24.4 -25.2	0.15 14.04	"
1.1108 0.9967 0.9967	4.12 4.12	30.18 30.85 0.40	0.40 58.0 51.0 0.06	-28.8 -30.8	0.37 27.73	Contains salicylic acid, dyed pink, aniline dye.
1.0760 1.0000	None.	20.36 17.68 0.23	22.0 0.90 0.85 0.04	-20.8 -23.6	0.53 16.26	None.

## THEO. MOORE, INSPECTOR.

1.0746 1.0000	None.	19.94 17.09 0.28	20.0 1.05 1.03 0.02	-24.4 -25.6	0.23 16.08	None.
1.0375 0.9997	"	19.64 16.67 0.28	27.6 1.44 1.41 0.03	-22.4 -22.8	0.08 15.37	"
1.0908 0.9999	"	24.24 20.84 0.30	18.8 1.66 1.59 0.06	-24.8 -26.4	0.30 18.98	"
1.0727 0.9994	"	19.45 16.16 0.25	22.6 1.41 1.36 0.04	-23.2 -23.6	0.08 15.25	"
1.0599 0.9998	"	16.07 13.57 0.28	21.8 1.06 1.04 0.01	-20.8 -21.5	0.13 12.23	"

## BULLETIN No. 166—

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	COST.		Name and Address of Manufacturer or Furnisher, as given by the Vendor.	Inspector's Report.
				Quantity.	Cost.		

## DISTRICT OF NEW BRUNSWICK—

1908.							
July 16	Unfermented Grape Juice.	29738	Foster & Co., Union St., St. John, N.B.	58 3 bot..	1 20	Pele Island Wine and Vinyard Co., Ltd., Brantford and Pelee Island, Ont.	Labelled Unfermented Grape Juice. Bottled by vendor from bulk.
" 17	"	29739	Nat. Drug and Chem. Co., Mill St., St. John, N.B.	3 "	.90	J. J. McLaughlin, Toronto.	Labelled McLaughlin's Grape Juice, from choicest Canadian Concords, pressed and sterilized in laboratory.
" 22	"	29746	The Can. Drug Co., Ltd., 70-72 Prince William St., St. John, N.B.	3 "	.75	Beach & Clarridge Co., Boston, Mass.	Labelled Grape Juice, sold as received. Would not guarantee purity and quality.
Aug. 5	"	29741	Fairweather Bros., Moncton, N.S.	3 "	1 20	Nat. Drug. Co., St. John, N.B.	From choicest Concord grapes, pure and unfermented, No. 140.
" 15	"	29742	Hunt & MacDonald, 597 Queen St., Fredericton, N.S.	3 "	1 05	Welch Grape Juice Co., Westfield, N.Y	Welch's Grape Juice.

## DISTRICT OF QUEBEC—

July 28	Unfermented Grape Juice.	34402	F. E. Garneau & Frère, 336 Rue St. Jean, Quebec.	3 bot..	.90	Welch's Vineland, N.Y.	.....
" 28	"	34403	J. Savard, 35 Rue St. Jean, Quebec.	3 "	.90	Nat. Drug. and Chem. Co., Canada.	National .....
" 28	"	34404	Eudone Patry, 57 3 Rue St. Jean, Quebec.	3 "	.90	" " "	Welch's. ....
" 28	"	34405	H. Beautey, 22 Rue 3 de la Fabrique, Quebec,	3 "	.54	Laporte & Martin, Montreal.	Duffy's Grape Juice, Amer. Fruit Co.
" 28	"	34406	" " " 3 "	3 "	.90	Leeming Miles, Montreal.	Noye's Ont. Grape Juice, mfd. by Ont. Grape Juice Co.

## UNFERMENTED GRAPE JUICE—Continued.

## RESULTS OF ANALYSIS

Spec. Grav. Of Juice.	Of Distillate.	Alcohol by Volume of Proof spirit.	Extract. From Sp. Gr. of residue, Gms. per 400 cc.	Ash, Gms. per 100 cc.	Acidity. Alkalinity of water solution, ash cc <sup>2</sup> /10 Acid per 100.	Polarization.	Invert.	Sucrose by Clerget's Formula.	Reducing sugar, Gms. per 100 cc.	Remarks and Opinion of the Chief Analyst.

J. C. FERGUSON, INSPECTOR.

p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.
1·1154	0·9916	10·67	32·60	28·70	0·14	14·6	0·71	0·54	0·13	-12·8
0·9913	"	11·08	33·57	"						-15·2
						Total.	Fixed. Gms. per 100 cc.	Volatile.	Direct.	
1·0867	0·9999	None.	23·28	19·14	0·21	19·2	1·50	1·39	0·08	-24·8
										-25·6
										0·15
										18·05
										None.
1·0945	0·9998	"	25·16	21·21	0·22	18·6	1·04	0·98	0·05	-32·4
										-33·4
										0·19
										21·44
1·0738	0·9995	"	19·74	16·51	0·25	23·8	0·88	0·85	0·03	-26·4
										-27·2
										0·15
										15·95
1·0720	0·9996	"	19·24	16·70	0·31	28·0	1·42	1·42	0·00	-24·8
										-24·8
										None.
										14·83
										"

E. BELAND, INSPECTOR.

1·0913	0·9998	None.	24·34	19·90	0·20	22·2	0·91	0·89	0·02	-28·8	-29·9	0·20	20·54	Contains salicylic acid.
1·1528	0·9999	"	40·04	33·60	0·23	20·0	1·32	1·26	0·05	-42·4	-43·1	0·13	35·97	None.
1·0664	0·9996	"	17·73	13·78	0·26	24·6	1·36	1·33	0·03	-23·6	-24·0	0·08	13·94	"
1·0716	0·9997	"	19·16	15·37	0·31	25·4	1·08	1·07	0·01	-23·2	-23·6	0·08	13·24	"
1·0778	0·9998	"	20·95	16·53	0·26	21·4	1·27	1·20	0·06	-23·6	-23·6	None.	16·69	"

\* Duplicate sample.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	COST.		Name and Address of Manufacturer or Furnisher, as given by the Vendor.	Inspector's Report.
				Quantity.	Cents.		

## DISTRICT OF ST. HYACINTHE—

Aug. 6	Unfermented Grape Juice.	165	G. A. Colore, Lac Megantic.	2 bot.	1 59	The Welch Grape Juice Co., Westfield, N.Y.	Bottles were opened to allow me to give part to vendor.
" 14	"	166	Thos. Hebert, St. Hyacinthe.	1 "	.75	American Fruit Product Co., Rochester, N.Y.	
" 21	"	167	L.S. Browne, Granby	1 "	.75	Ontario Grape Juice Co., Niagara Falls, Canada.	
Sept. 17	Grape Juice . . .	Spec'd 32975	C. W. Coates, 298 St. Catherine St. W., Montreal.	3 "	.90	G. A. Drummond, "Fruit of the Vine," Reobuck, Ont.	

## DISTRICT OF MONTREAL—

July 17	Unfermented Grape Juice.	32611	R. Turner, 601 Wellington St., Montreal.	3 bot.	.75	Turner & Co., Toronto.	Labelled 'Turner & Co.'s Unfermented Grape Wine.'
" 18	"	32612	Gravel Frères, 382 St. Catherine St. W., Montreal.	3 "	1 20	St. David's Wine Co.	Imperial Brand..
" 18	"	32613	Chas. E. Scarff, 358 St. Catherine St. W., Montreal.	3 "	.90	Vendors	
" 18	"	32614	T. R. Goulden, 481 Bleury St., Montreal.	3 "	1 05	Ontario Grape Juice Co.	
" 18	"	32615	Henri Lalonde, 180 St. Catherine St. E., Montreal.	3 "	1 05	The Welch Grape Juice Co.	

## DISTRICT OF OTTAWA—

July 14	Unfermented Grape Juice.	22658	W. H. Raney, Prescott, Ont.	3 bot.	.65	Ontario Grape Juice Co., Niagara Falls, Ont.	Labelled Pure Unfermented Grape Juice, without the addition of any adulterant or preservative whatever
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## UNFERMENTED GRAPE JUICE—Continued.

## RESULTS OF ANALYSIS.

Spec. Of Jui. Or Distillate.	Grav.	Alcohol by Volume of Proof spirit.	Extract. From Sp. Gr. of residue, Gms. per 100 cc.	48 hr. drying in water oven, Gms. per 100 cc.	Ash, Gms. per 100 cc.	Alkalinity of water solution, ash cc. N/10	Acidity. Acid per 100.	Polarization.	Invert.	Sucrose by Clerget's Formula.	Reducing sugar, Gms. per 100 cc.	Remarks and Opinion of the Chief Analyst.
<b>J. C. ROULEAU, INSPECTOR.</b>												
1·0665	1·0000	None.	17·84	14·88 0·28	23·0 1·18 1·18 0·00	-19·6 -19·6	None.	13·76	.....	.....	.....	Received in mouldy condition; unfit for analysis. Bottles were opened by collector, and contents divided, but not sterilized.
1·1134	0·9999	None.	30·10	..... 0·20	24·2 1·00 1·00 0·00	-13·6 -26·8	2·56	21·95	.....	.....	.....	"
<b>J. J. COSTIGAN, INSPECTOR.</b>												
1·1102	0·9982	2·09	29·61	27·00 0·21	0·0 0·56 0·51 0·04	-28·8 -28·8	None.	26·78	.....	.....	.....	Contains salicylic acid, strongly dyed, light red aniline dye.
1·0480	0·9990	1·16	12·74	11·00 0·24	3·4 0·53 0·53 0·00	-10·0 -12·8	0·45	10·35	.....	.....	.....	Contains no preservatives, dyes, &c.
1·0192	0·9860	18·81	8·65	7·08 0·23	13·2 1·35 1·22 0·11	-20·4 -20·4	None.	5·26	.....	.....	.....	Contains salicylic acid; not well stoppered; heavy sediment.
1·0020	0·9980	2·34	24·93	.....	.....	.....	.....	.....	.....	.....	.....	.....
1·0788	0·9998	None.	20·95	17·81 0·24	21·0 1·14 1·11 0·03	-23·6 -24·0	0·08	17·14	None.	.....	.....	.....
1·0730	0·9994	"	19·55	16·36 0·27	19·8 0·88 0·76 0·10	-26·0 -26·8	0·15	15·74	.....	.....	.....	.....

## J. A. RICKY, INSPECTOR.

1·056	0·9999	None.	17·78	14·71 0·25	21·4 1·17 1·11 0·05	-20·8 -21·6	0·15	18·80	None.
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## BULLETIN No. 166—

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	COST		Name and Address of Manufacturer or Furnisher, as given by the Vendor.	Inspector's Report.
				Quantity.	Cents.		

## DISTRICT OF OTTAWA—

1908.							
July 22	Unfermented Grape Juice.	22659	S. J. Stevenson, 3 Ottawa, Ont.	3	" 1 05	The Welch Grape Juice Co., West- field, N.Y.	Labelled Welch's Grape Juice, from choicest Concord grapes. Pure and unfer- mented.
" 22	" ..	22660	J. S. Brown, Ottawa, 3 Ont.	3	" 1 10	" "	" " "
" 23	" ..	22661	D. H. McIntosh, 3 M. D., Carleton Place.	3	" 75	Hager Bros., Wel- land, Ont.	Labelled Imperial Unfermented Juice of the Grape.
" 25	" ..	22662	Dr. Lyon, Shawville, 3 Que.	3	" 1 20	The Welch Grape Juice Co., West- field, N.Y.	Labelled Welch's Grape Juice, from choicest Concord grapes. Pure and unfer- mented.

## DISTRICT OF KINGSTON—

July 20	Unfermented Grape Juice.	35270	G. W. Mahood, 3 bot. Kingston.	75	Ontario Grap. Grow- ing and Wine Mfg. Co., St. Catharines	.....	
" 21	" ..	35271	H. Wade, Kingston, 3	" 1 00	The Welch Grape Juice Co., West- field, N.Y.	.....	
" 21	" ..	35272	W. W. Gibson, Kings- ton,	" 90	Nat. Drug and Chem. Co.	National	....
" 22	" ..	35273	D. M. Waters, Belle- ville,	" 75	Ontario Grape Juice Co., Niagara Falls, Ont.	.....	
" 22	" ..	35274	R. Templeton, Belle- ville,	" 1 00	Turner & Co., Tor- onto.	.....	

## DISTRICT OF TORONTO—

July 29	Unfermented Grape Juice.	35139	J. J. McLaughlin, Ltd., Sherbourne St., Toronto.	3 bot.	60 Vendors.....	Grape juice from choicest Can- adian Concords. Pressed and sterilized pure and unfer- mented with granulated sugar added.
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## UNFERMENTED GRAPE JUICE—Continued.

## RESULTS OF ANALYSIS.

Spec. Grav. Of Juice.	Of Distillate.	Alcohol by Volume of Proof spirit.	Extract. From 50 gms. of residue, per 100 cc.	Ash, gms. per 100 cc.	Alkalinity of water solution, ash cc. <sup>14</sup>	Acidity. Ash; per 100, Total.	Polarization. Fixed tins. per 100 cc.	Volatile.	Direct.	Invert.	Sucrose by Clerget's Formula.	Reducing sugar, gms. per 100 cc.	Remarks and Opinion of the Chief Analyst.
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## J. A. RICKEY, INSPECTOR—Concluded.

p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	None.
1·0666	0·9998	"	17·80	14·86	0·24	24·0	1·44	1·36	0·07	-21·2	-22·0	0·15	13·86
1·0693	0·9995	"	18·59	15·44	0·30	28·4	1·47	1·38	0·07	-25·2	-25·2	None.	14·48
1·0740	0·9995	"	19·76	16·58	0·25	14·2	0·99	0·96	0·03	-20·0	-21·6	0·30	16·38
1·0744	0·9998	"	19·94	16·08	0·33	32·0	1·44	1·42	0·02	-20·8	-22·0	0·23	15·62

## J. HOGAN, INSPECTOR.

1·1141	0·9998	None.	30·22	25·51	0·23	23·2	0·88	0·82	0·05	-31·2	-32·0	0·15	26·38	None.
1·0688	0·9901	"	18·42	15·21	0·24	22·6	1·38	1·37	0·01	-24·8	-25·9	0·20	14·40	"
1·1468	0·9998	"	38·45	31·86	0·21	22·4	0·87	0·79	0·07	-43·6	-46·0	0·45	34·86	"
1·0820	0·9996	"	21·83	17·02	0·28	24·4	1·24	1·22	0·02	-25·6	-26·4	0·15	17·31	"
1·1087	0·9975	3·03	29·57	26·93	0·18	0·4	0·58	0·58	0·00	-24·8	-27·6	0·52	27·21	Contains salicylic acid strongly dyed bright red aniline dye.
	0·9968	3·99	30·92*											

## H. J. DAGER, INSPECTOR.

1·0868	0·9999	None.	23·18	20·04	0·25	20·4	1·57	1·56	0·01	-22·6	-24·4	0·34	18·28	None.
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\* Duplicate sample.

## BULLETIN No. 166—

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	COST.		Name and Address of Manufacturer or Furnisher, as given by the Vendor.	Inspector's Report.
				Quantity.	Cents.		

## DISTRICT OF TORONTO—

1908.							
July 31	" ..	35140	The Ont. Grape Growing & Wine Mfg. Co., St. Catherines.	3 "	50	Vendors .....	Not labelled. Vendor said that on account of grapes being frozen sugar was added with juice to sweeten and improve.
Aug. 10	" ..	35141	Turner & Co., Jarvis St., Toronto.	3 "	75	" ..	Labelled Turner's Unfermented Grape Juice. Mfd. by Turner & Co.
" 11	" ..	35142	W. H. Snyder, Niagara Falls.	3 "	75	Vendor .....	Pure unfermented grape juice, made by Ont. Grape Juice Co. from selected grapes. Unadulterated and no preservative added. Sold as pure grape juice.
" 11	" ..	35143	Hager Bros., Welland.	3 "	75	Vendors .....	Labelled imperial juice of the grape unfermented. No preservatives used. Preserved by entire exclusion of air.

## DISTRICT OF LONDON—

July 21	Unfermented Grape Juice.	30952	Walsh Bros., Stratford.	3 bot.	75	T. A. Littell & Co., Toronto.	Sterling Brand. Purchased as unfermented grape juice. Labelled 'Unfermented Grape Wine.' The word 'grape' being pasted on the label.
" 29	Grape Juice. . .	30968	William Grewer, Brussels.	3 "	75	J. J. McLaughlin, Toronto.	
Aug. 1	" ..	30978	Cardino Bros., Salford.	3 "	75	Turner & Co., Toronto.	

## UNFERMENTED GRAPE JUICE—Continued.

## RESULTS OF ANALYSIS.

Spec. Grav.	Of Juice.	Of Distillate.	Alcohol by Volume of Proof spirit	Extract.				Acidity.	Polarization.	Sucrose by Clerget's Formula.	Reducing sugar, Gms. per 100 cc.	Remarks and Opinion of the Chief Analyst.
				From Sp. Gr. of residue, Gms. per 100 cc.	48 hrs. drying in water oven, Gms. per 100 cc.	Ash, Gms. per 100 cc.	Alkalinity of water solution, ash ex <sup>10</sup> end per 100.					

H. J. DAGER, INSPECTOR—Concluded.

1·1157	0·9995	"	30·62	25·34	0·18	24·2	0·87	0·76	0·09	-36·8	-39·6	0·52	27·44	"
1·1186	0·9973	8·30	31·32	29·10	0·17	0·40	0·63	0·57	0·06	-34·8	-34·8	None	29·00	Contains salicylic acid—(strong reaction)—strongly dyed scarlet, aniline dye.
	0·9973	3·30	30·97											
1·0647	1·0000	None	17·31	14·58	0·24	21·6	0·75	0·73	0·02	-21·6	-24·4	0·15	13·83	Contains no preservatives, dyes, &c.

JOHN TALBOT, INSPECTOR.

1·1160	0·9974	3·16	31·51	29·11	0·25	0·40	0·75	0·69	0·06	-30·8	-31·6	0·15	28·18	No preservatives. Dyed.
0·9970	3·71	31·95												
1·0872	0·9997	None	23·26	19·80	0·19	19·8	1·58	1·56	0·02	-24·0	-24·8	0·52	18·48	"

1·1168 0·9975 3·03 30·92 28·06 0·16 0·40 0·69 0·64 0·12 -31·2 -34·0 0·52 28·91 Contains salicylic acid—(strong reaction)—strongly dyed, bright pink, aniline dye.

\* Duplicate sample.  
9756—2

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.		Name and Address of Manufacturer or Furnisher, as given by the Vendor.	Inspector's Report.
				Q. quantity.	Cents.		

## DISTRICT OF WINDSOR—

1908.	Aug. 11	Unfermented Grape Juice.	34588	E. B. Smith, London	3 bot.	75	Jules Robinet, Sandwich, Ont.	.....
	" 13	" ..	34604	Sharpe Liquor Store, St. Mary's.	3 "	60	Niagara Falls Wine Co.	Labelled 'Pure Canadian Grape Wine.'

## DISTRICT OF MANITOBA—

July 29		Unfermented Grape Juice.	33192	D. E. Clement, Brandon.	3 bot.	2 25	N. C. Polson & Co., Kingston, Ont.	Pourita unfermented wine. Guaranteed free from alcohol or spirits.
" 29	"	" ..	33193	Scott's Drug Store, Brandon.	3 "	2 25	The Welch Grape Juice Co., Westfield, N.Y.	From choicest grapes. Pure and unfermented.
Aug. 12	"	" ..	33194	The Gordon Mitchell Drug Co., Winnipeg.	3 "	1 50	Ontario Grape Juice Co., Niagara Falls, Ont.	Noye's Ontario unfermented grape juice.
" 12	"	" ..	33195	" " ..	3 "	1 95	Hager Bros., Welland, Ont.	Imperial unfermented juice of the grape.
" 13	"	" ..	33196	W. T. C. Brathwaite, Winnipeg.	3 "	1 05	The Welch Grape Juice Co., Westfield, N.Y.	From choicest grapes. Pure and unfermented.

## DISTRICT OF CALGARY—

Aug. 14		Unfermented Grape Juice.	35341	Wood & Green, Calgary.	3 pts.	1 35	Welch Grape Juice Co., Westfield, N.Y.	.....
" 14	"	" ..	35342	Great West Liquor Co., Calgary.	3 qts.	1 50	Augusta Gely, wine grower, Taragona, Spain.	Labelled 'Gely's non-alcoholic wine.'
" 14	"	" ..	35343	Owen H. Bot, Calgary.	3 pts.	1 35	Welch Grape Juice Co., Westfield, N.Y.	.....
" 14	"	" ..	35344	Calgary Wine & Spirit Co., Calgary.	3 qts.	2 50	J. W. Lee & Co., Toronto.	Labelled 'St. David Wine Growers Co.'
" 14	"	" ..	35345	Bole Drug Co., Calgary.	3 pts.	1 00	Welch Grape Juice Co., Westfield, N.Y.	.....

## UNFERMENTED GRAPE JUICE—Continued.

## RESULTS OF ANALYSIS.

Spec. Grav. Of Juice.	Of Distillate.	Absorb by Volume of Proof spirit.	Extract.			Acidity.			Polarization.			Sucrose by Clepet's Formula.	Reducing sugar, Gms. per 100 cc.	Remarks and Opinion of the Chief Analyst.
			From Sp. Gr. of residue, Gms. per 100 cc.	From 48 hrs. drying in water oven, Gms. per 100 cc.	Ash, Gms. per 100 cc.	Total	Alkalinity of water solution, sat. at 20° C., Acid per 100.	Volatile.	Direct.	Invert.				

## T. KIDD, INSPECTOR.

p. e.	p. e.	p. e.	p. e.	p. e.	p. e.	p. e.	p. e.	p. e.	p. e.	p. e.	p. e.	p. e.	p. e.
1·0068	0·9973	3·30	26·11	23·98	0·22	14·2	1·05	0·63	0·34	-23·2	-26·8	0·67	23·52
1·0334	0·9823	24·69	13·39	12·60	0·22	9·6	0·60	0·45	0·12	-20·8	-21·6	0·15	10·70

• 0·9819 25·34 14·34

Contains salicylic acid—(very marked reaction).  
None (fermented wine).

## A. C. LARIVIERE, INSPECTOR.

1·1003	0·9961	4·89	27·79	25·63	0·16	0·4	0·43	0·39	0·03	-28·8	-31·6	0·52	24·73
0·9960	5·01	27·63	*										
1·0704	0·9997	None	18·83	16·30	0·25	23·6	0·90	0·87	0·03	-24·8	-25·1	0·06	15·18
1·0638	1·0000	"	17·06	14·32	0·26	20·8	1·08	1·05	0·03	-19·2	-19·8	0·11	13·11
1·0727	0·9998	"	19·43	17·00	0·28	24·4	1·07	1·02	0·04	-19·6	-20·2	0·11	15·60
1·0704	0·9994	"	18·81	16·47	0·26	22·0	1·01	0·88	0·11	-24·0	-25·2	0·23	16·64

Contains salicylic acid, dyed pink. Aniline dye.

Contains no preservatives, dyes, &c.

" "

" "

## R. W. FLETCHER, INSPECTOR.

1·0717	0·9995	None	19·19	16·37	0·28	25·6	1·47	1·42	0·04	-25·6	-26·6	None	14·85
0·9954	0·9784	31·22	4·30	3·28	0·20	4·40	0·64	0·45	0·15	-8·80	-9·40	0·11	2·08
1·0728	0·9992	None	19·45	16·59	0·30	22·8	1·41	1·37	0·04	-25·2	-26·0	0·15	15·20
1·0480	0·9993	"	12·78	11·05	0·16	1·69	0·55	0·48	0·06	-8·00	-8·40	0·08	10·18
1·0655	0·9993	"	17·63	14·57	0·26	22·0	1·42	1·41	0·01	-23·6	-24·0	0·08	13·48

\* Duplicate sample.

## BULLETIN No. 106—

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.		Name and Address of Manufacturer or Furnisher, as given by the Vendor.	Inspector's Report.
				Quantity.	Cost.		
<b>DISTRICT OF VANCOUVER—</b>							
1908.							
July 30	Unfermented Grape Juices.	34310	Lepatouré & McRae, Vancouver, B.C.	3 pts.	1 05	The Welch Grape Juice Co., West- field, N.Y.	Labelled 'Pure and Unfer- mented.'
" 30	" . .	34311	Nelsons Drug Store, Vancouver, B.C.	3 "	1 20	J. J. McLaughlin, Toronto, Ont.	" "
" 30	" . .	34312	W. M. Harrison, Van- couver, B.C.	3 qts	1 50	N. C. Polson & Co., Kingston, Ont.	Labelled 'Purita Unfermented Grape Juice,' Guaranteed free from alcohol or spirits.
" 30	" . .	34313	Woodwards Deptl. Stores, Vancouver, B.C.	3 pts	1 20	The Ont. Grape Growing and Wine Mfg. Co., St. Cath- arines, Ont.	Sold in bulk and guaranteed by vendor as un- fermented.
" 30	" . .	34314	H. McDowell & Co., Vancouver, B.C.	3 qts	3 00	La Société Anonyme Du Mas de la Ville, Arles, France.	Imported and supplied by R. P. Rithet, Vic- toria. Guar- anteed by vendor unfermented grape juice.
<b>DISTRICT OF VICTORIA—</b>							
July 22	Unfermented Grape Juice.	34962	Saunders Grocery Co., Ltd.	3 bot.	1 50	Ingersoll & Mellish, London, Eng.	Made-la Ville wine.
" 23	" . .	34960	Fred. Carne.....	3 "	1 05	Ontario Grape Juice Co., Niagara Falls, Can.	Noye's Ontario grape juice.
" 23	" . .	34964	Copas & Young.....	3 "	1 00	Ingersoll & Mellish, London, Eng.	Made-la Ville wine.
" 24	" . .	34970	Dixi H. Ross & Co..	3 "	1 20	The Welch Grape Juice Co., West- field, N.Y.	Welch's grape juice.
" 31	" . .	34976	Geo. A. Fraser.....	3 "	1 20	The Welch Grape Juice Co., West- field, N.Y.	" "
Oct. 29	Pure Black Cher- ry Wine.	A	Toronto Wine Co., Toronto, Ont.	....	....	Toronto Wine Co., Toronto, Ont.	Sample labelled 'Pure Black Cherry Wine.' Bottled by To- ronto Wine Co., Toronto, Ont.

## UNFERMENTED GRAPE JUICE—Continued.

## RESULTS OF ANALYSIS.

Spec. Grav. Of Juice.	Of Distillate.	Alcohol by Volume of Proof spirit.	Extract. From 100 grms. fructose, Gms. per 100 cc.	Sp. Gr. of fructose, Gms. per 100 cc.	Expt. % 38 hrs. drying in water oven, Gms. per 100 cc.	Acidity. Ash, Gms. per 100 cc.	Polarization. Alkalinity of water, solution, ash or? Acid per 100.	Total Fixed Gms. per 100 cc.	Volatile.	Direct.	Invert.	Sucrose by Clerc's Formula.	Reducing sugar, Gms. per 100 cc.	Remarks and Opinion of the Chief Analyst.	
<b>J. F. POWE'S, INSPECTOR.</b>															
1·0755	0·9997	None	20·14	16·20	0·23	p. c.	p. c.	22·0	0·84	0·81	0·03	-24·4	-25·5	p. c.	
													0·20	16·56	None.
1·0881	0·9999	"	23·50	20·55	0·21	18·6	1·48	1·48	0·00	-23·6	-23·6	None	19·06	"	
1·1011	0·9994	5·74	28·17	25·15	0·28	0·4	0·71	0·66	0·04	-32·0	-34·4	0·45	24·85	Contains salicylic acid, dyed with pink aniline dyes.	
	0·9994	5·74	23·09*												
1·0496	0·9921	25·01	18·15	13·89	0·22	8·0	0·61	0·43	0·14	-20·8	-21·1	0·06	13·94	Contains salicylic acid. Labelled 'Un- fermented Grape Juice.'	
	0·9823	24·60	17·92*												
1·0786	1·0000	None	20·88	17·80	0·25	21·4	0·55	0·50	0·04	-24·4	-24·4	None	18·13	None.	
<b>D. O. SULLIVAN, INSPECTOR.</b>															
1·0813	1·0000	None	21·63	19·26	0·21	19·8	0·59	0·51	0·06	-24·0	-24·8	0·15	18·19	Contains no preservatives, dyes, &c.	
1·0755	0·9996	"	20·24	17·26	0·30	12·4	1·26	1·23	0·03	-21·2	-22·8	0·30	15·87	" "	
1·0755	1·0000	"	20·18	18·60	0·24	23·0	0·57	0·54	0·08	-23·2	-23·6	0·08	18·10	" "	
1·0920	0·9995	"	20·01	22·04	0·28	21·8	1·44	1·44	0·00	-26·8	-27·6	0·15	20·00	" "	
1·0721	0·9989	1·28	19·39	16·89	0·38	16·8	0·87	0·82	0·04	-26·4	-27·2	0·15	15·10	" "	
1·0481	0·9998	Trace	12·48	..	0·04	3·2	0·65	..	..	+27·6	-13·2	7·92	....	Sample strongly dyed, gives strong reac- tion for sali- cylic acid. Both wine and ether. Extract small strongly of benzalde- hyde. Sp. gr. of dealkohol- ized wine = 1·0482 C.G.F.	

\*Duplicate sample.

†Expressed as citric acid.

## BULLETIN No. 166—

Date of Collection.	Nature of Sample.	No. of Sample.	Nature and Address of Vendor.	Cost.		Name and Address of Manufacturer or Furnisher, as given by the Vendor.	Inspector's Report.
				Quantity.	Cents.		
1908.							

## DISTRICT OF VICTORIA—

1908.	" 29	Pure Unfermented Wine, (Black Cherry)	B	Not known.....		Toronto Wine Co., Toronto, Ont.	Sample labelled 'Pure Unfermented Wine, Black Cherry.'
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## UNFERMENTED GRAPE JUICE—Concluded.

## RESULTS OF ANALYSIS.

Spec. Grav. Of Juices.	Of Distillate.	Alcohol by Volume of Proof spirit.	Extract. From Sp. Gr. of residue, Gms. per 100 cc.	Ash, Gms. per 100 cc.	Alkalinity of water, solution, ash occ <sup>1/10</sup>	Acidity. Ash per 100.	Polarization.	Sucrose by Clerget's Formula.	Reducing sugar, Gms. per 100 cc.	Rewards and Opinion of the Chief Analyst.
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## D. O. SULLIVAN, INSPECTOR—Concluded.

p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	Total.	Fried Gms. 100 cc.	Volatile.	Direct.	Invert.	Sucrose by Clerget's Formula.	Reducing sugar, Gms. per 100 cc.
1·1482	0·9994	0·70	39·15	....	0·06	9·21·08	....	....	....	....	....	....	....

Sample strongly dyed, red aniline dye. Gives strong reaction for salicylic acid. Flavor and odor somewhat of raspberry. Sp. gr. of de-alcoholized wine = 1·1496.

