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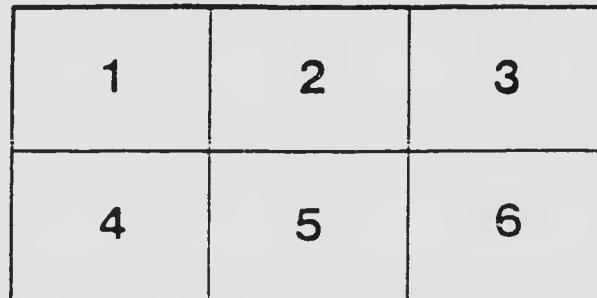
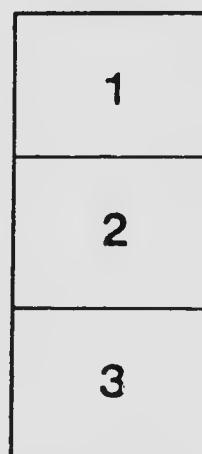
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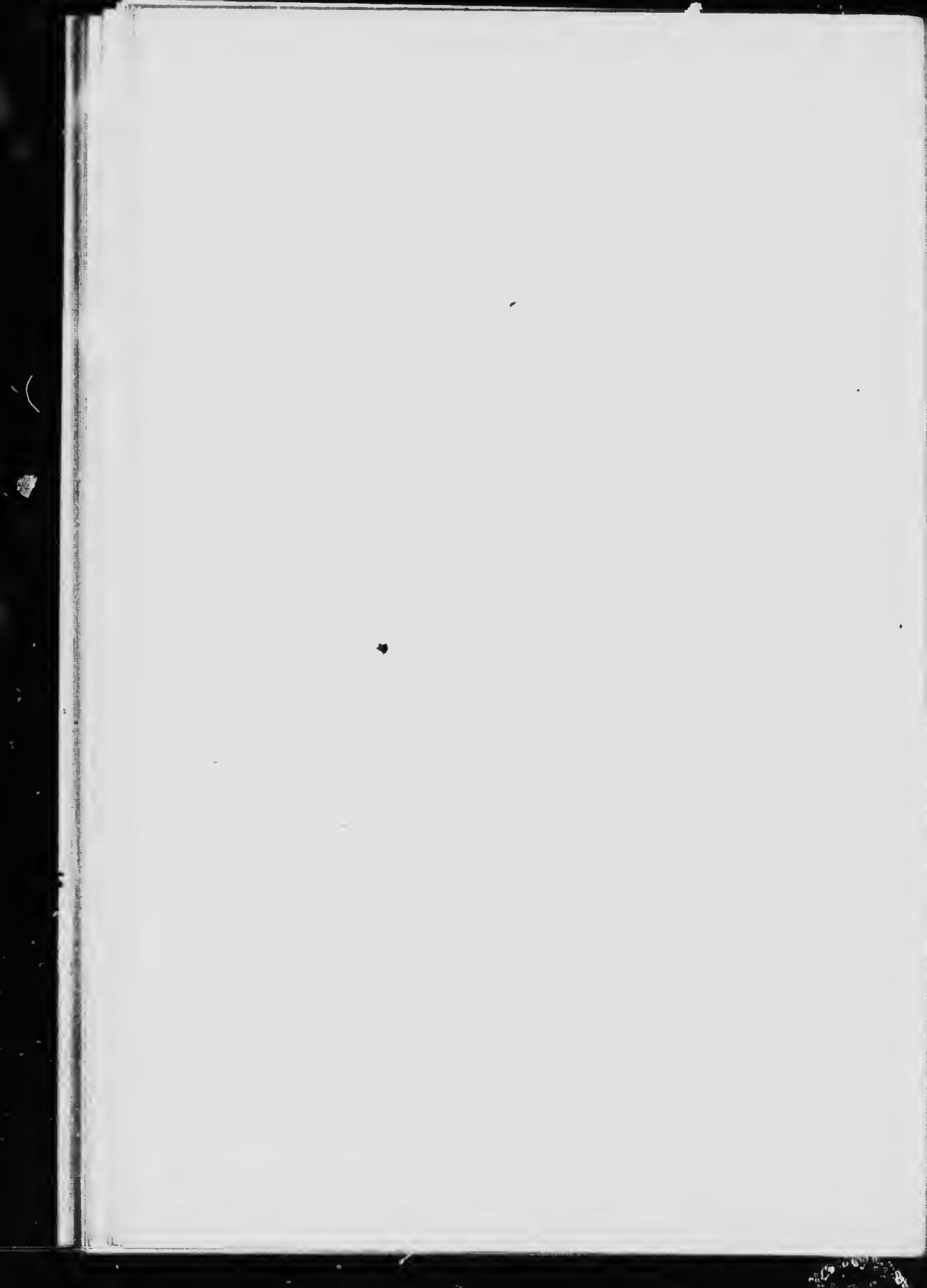
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LABORATORY

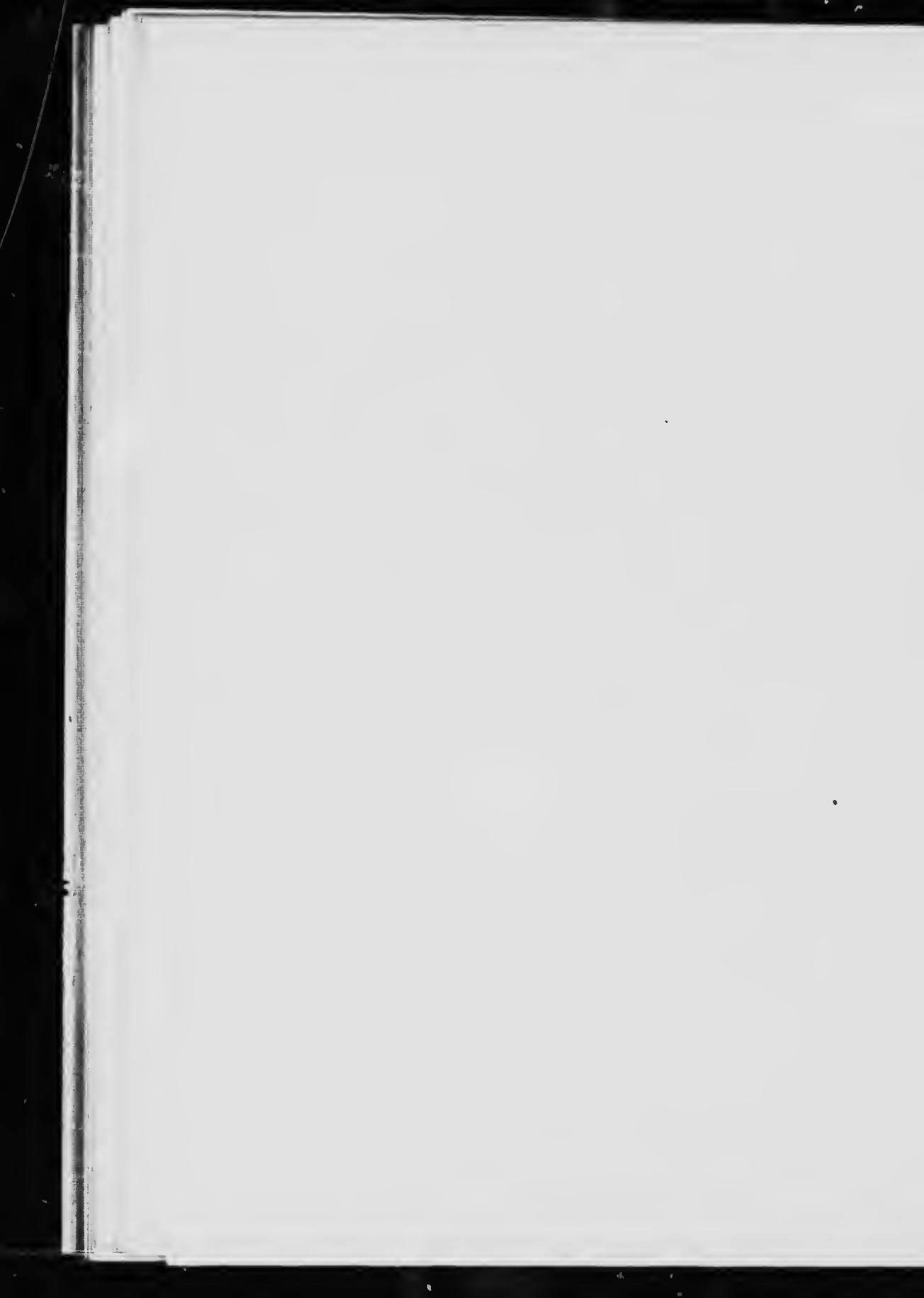
OF THE

INLAND REVENUE DEPARTMENT

OTTAWA, CANADA

BULLETIN No. 129

TOMATO CATSUP



LABORATORY OF THE INLAND REVENUE DEPARTMENT

OTTAWA, CANADA

BULLETIN No. 129

TOMATO CATSUP

OTTAWA, December 15, 1906.

W. J. GERALD, Esq.,

Deputy Minister of Inland Revenue.

SIR.—I beg to submit the following report regarding the collection of samples of tomato catsup which was authorized by you in August last. The following list gives the number of samples and where collected:—

Inspection District.	No. of Samples.
Nova Scotia	3
Prince Edward Island.....	2
New Brunswick.....	3
Quebec	4
St. Hyacinthe.....	4
Montreal.....	6
Ottawa	5
Kingston	4
Toronto.....	5
London	4
Manitoba	4
Calgary	2
British Columbia	3
	49

All the details concerning these samples and their examination in this laboratory are given in the tabular statement appended to this report, in which I have also incorporated my remarks regarding the results of the analyses. I have inclined to the opinion that those samples, in the manufacture of which a dye has been used, are 'adulterated according to the Act.' This judgment would not be based upon the injurious nature of the dye, but because its use is prohibited by the Adulteration Act. Section 1 (e) (8) of the latter provides that 'food shall be deemed to be adulterated within the meaning of this Act, if it is so coloured or coated or polished or powdered that damage is concealed, or if it is made to appear better or of greater value than it really is.' According to information obtained from manufacturers, the use of a dye is unnecessary when the catsup is made from fresh tomatoes. It is when the fruit is 'out

of season' and the pulp has to be kept in stock for a considerable time that the colour suffers and the use of a dye becomes necessary. In such cases it might be reasonably inferred that they have been coloured to conceal damage, or that the dye has been used to make the article appear of greater value than it really is, and consequently that the word 'adulterated' should be applied. Nevertheless, not being willing to take the responsibility of making such inferences, I have inserted the remark, 'adulteration doubtful.' Twenty three out of the forty nine samples were found to be dyed and consequently thus 'adulterated.'

Some of the samples referred to are not only dyed but contain preservatives. In nineteen other samples which contained no foreign colouring matter, small quantities of preservatives were also found. Granting that the latter as used are not injurious to health, it can of course be maintained that they are required for the production of the catsup 'in a state fit for consumption.' (*See Adulteration Act 2 (g) (1).*) But even in that case the law requires that they should be 'distinctly labelled as a mixture.' Since this has not been done, except in one case, No. 26892, Montreal, I have stated the opinion in the tabulated statement that eighteen of the samples referred to are 'adulterated,' giving the reason. The remaining seven samples in which foreign colouring matter and preservatives were not found, together with No. 26892 above mentioned, I have characterised as unadulterated. The classification therefore stands as follows:

Unadulterated	8
Not marked 'mixture'	18
Adulteration doubtful	23
Total	49

From the tabulated statement it will be seen that these samples vary very considerably in the amount of solids they contain, which must certainly affect their value as condiments. This percentage varies from 7·44 to 29·04, and indicates great differences in the quantities of materials used to make a certain amount of product. There are also variations as regards the quality of the solids, which are shewn in the following table as the results of examining eighteen of the samples, taken almost at random, and subjected to treatment in crysotile fibre:—

Number of sample.	Total solids.	Water.	Solids soluble in alcohol.	Solids soluble in water after alcohol.	Insoluble residue.	Percentage of insoluble residue to total solids.	Nitrogen in alcohol extract.
28322	22·80	77·20	16·32	5·68	0·80	3·51	ndet.
24271	17·26	82·74	13·36	2·72	1·18	6·84	0·22
732	11·50	88·50	6·84	2·16	2·50	21·74	0·20
479	8·10	91·90	4·60	1·72	1·78	21·97	0·19
26892	17·90	82·10	12·50	4·70	0·70	3·91	0·33
29363	26·44	73·56	17·12	8·58	0·64	2·42	0·74
29371	25·76	74·24	21·00	3·16	1·60	6·21	0·12
29372	16·52	83·48	11·36	3·50	1·66	10·05	0·14
32305	13·20	86·80	9·26	2·50	1·74	11·06	0·93
29495	20·26	79·74	15·60	4·00	0·74	3·25	ndet.
30160	23·31	76·66	17·44	4·60	1·30	5·57	0·20
25921	10·08	89·92	6·56	1·71	1·78	17·96	0·89
25922	15·74	84·26	10·86	3·78	1·10	6·99	0·94
25923	9·92	90·08	3·88	3·60	3·04	30·64	0·94
25924	20·70	79·30	16·40	3·08	1·22	5·89	0·85
28606	15·80	84·20	10·70	4·54	1·02	6·45	0·56
28607	21·40	78·60	15·00	5·76	0·60	3·08	0·64
28176	17·30	82·70	10·56	6·20	0·54	3·12	ndet.

The remarkable feature brought out by these tests is the large amounts of substances in the total solids which are soluble in alcohol and water. In the preparation

of tomato ketchup a large amount of the vegetable fibre which the original raw material contains seems to be rendered soluble. In twelve out of eighteen samples examined the amount of total solids in an insoluble condition does not exceed 7 per cent. In four out of the remaining six samples the insoluble varies from 17·66 to 30·61 per cent. Whether these differences have any particular meaning is a question which may well be reserved for future investigation.

Meanwhile the results of certain experiments for making 'catsup' from other vegetables may here be put on record. In treating these the following process was adopted, which is taken from Mrs. Lincoln's Boston Cook Book: 'Boil one bushel of ripe tomatoes, skins and all, and when soft strain through a colander to remove the skins only. Mix one cup of salt, two pounds of brown sugar, half an ounce of cayenne pepper, three ounces each of ground allspice, mace and celery seed, two ounces of ground cinnamon and stir into the tomatoe. Add two quarts of best cider vinegar, and when thoroughly mixed strain through a sieve. Pour all that runs through into a large kettle and boil slowly till reduced one half. Put into small bottles and keep in a cool dark place.' Catsups from apple, turnip and pumpkin pulp were made by following this recipe, and the products gave the following results when tested in the same manner as the above mentioned eighteen samples:

	Total solids	Water.	Substances soluble in alcohol.	Soluble in water after alcohol.	Insoluble residue.	Percentage of insoluble residue in total solids.	Nitrogen in alcohol extract.
	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.
Apple.	12·40	87·60	9·66	1·92	0·82	6·61	0·87
Turnip.	17·42	82·58	12·80	2·30	2·32	13·31	1·02
Pumpkin.	12·80	87·20	9·30	1·78	1·72	13·42	0·93

In conclusion I have to report that all the results herein described have been obtained under my directions by Mr. A. Lemoine, assistant analyst. Recommending the publication of this report,

I have the honour to be—sir,

Yours very truly yours,

THOMAS MACFARLANE,

Chief Analyst.

RESULTS OF EXAMINING 49

DISTRICT OF NOVA SCOTIA

Date of Collection	Nature of Sample	Number of Sample	Cost.		
			Quantity	Value	8 c.
1906.					
Aug. 28	Tomato catsup	27479 W. E. Crowe & Co., Halifax	3 bots	0.30	Aylmer Canning Co., Aylmer, Ont.
" 30	Homemade	27483 Lovitt & Lovitt, Yarmouth	3 month	0.75	T. A. Snider Preserve Co., Cincinnati, Ohio, U.S.A.
" 31	Tomato catsup	27485 Wm. Law & Co., Yarmouth	3	0.38	A. Camp Packing Co., Indianapolis, U.S.

DISTRICT OF PRINCE EDWARD

Aug. 23	Tomato catsup	28322 Jenkins & Son, Charlotte town	3 bots	0.45	Grantham Preserve Works, St. Kitts.
" 23	"	28323 Stewart & Son, Charlotte town	3	0.60	Pure Gold Manufacturing Co., Toronto.

DISTRICT OF NEW BRUNSWICK

Aug. 23	Tomato ketchup	24270 Dearborn & Co., 95 Prince William St., St. John, N.B.	3 bots	0.75	Aylmer Canning Co., Aylmer, Ont.
" 23	"	24271 Vanvart Bros., cor. Duke and Charlotte Sts., St. John, N.B.	3	1.05	Curtiss Bros. Co., Rochester, N.Y., U.S.A.
" 23	"	24272 William Baxter, cor. Lester and Carmarthen Sts., St. John, N.B.	3	0.75	Flynn Bros., Garden City Canning Co., St. Catharines, Ont.

DISTRICT OF QUEBEC

Sept. 10	Tomato catsup	726 Syndicat de Fraserville, Fraserville, Que.	3 bots	0.60	Not known....
" 11	"	728 The Dixon Café, Rimouski, Que.	3	0.45	Hudon, Hebert et Cie, Montreal.
" 14	"	731 L. P. Demers, Quebec	3	0.30	J. B. Renand et Cie, Quebec
" 14	"	732 Leandre Faucher, Quebec	3	0.45	Quebec Preserving Co., Q.

SAMPLES OF TOMATO CATSUP.

R. J. WAUGH, INSPECTOR.

RESULTS OF ANALYSIS.

Inspector's Report.	Total Solids.				Acidity stated as Acetic Acid.	Preservatives.			Remarks by the Chief Analyst.
	Total Ash.	Acidity	Sulphuric Acid.	Potassic Acid.					
Sold as Canada!	25.90	3.23	1.20 Doubt- ful.	None	Present	Present	Not marked as a 'mix- ture,' and therefore adulterated.	"	"
The vendors are wholesale dealers.	22.40	3.70	1.08 None	"	"	None	"	"	Adulteration doubt- ful.
	25.30	2.50	1.44 Present	"	"	"			

ISLAND - T. MOORE, INSPECTOR.

'Puritan' Brand	27.42	6.96	1.20	Doubtful.	None	Trace	I'm adulterated.
	13.72	2.16	0.72	None	Present	None	Not marked as a 'mixture,' and therefore adulterated.

J. C. FERGUSON, INSPECTOR.

Labelled 'Long Island Ketchup.' Bottled by Deacon & Co., St. John, N.B.	23.34	3.90	1.44	None	None	Present	Present	Not labelled 'mix-ture,' and therefore adulterated.
Labelled Curtice Bros. Biscuit Label: guaranteed free from artificial colour; contains $\frac{1}{5}$ of 1 p.c. benzoate of soda.	17.72	3.62	0.90	0	0	0	0	" " "
Labelled Flinn Bros. Tomato Ketchup. Garden City Canning Co., St. Catharines, Ont.	18.56	3.62	0.90	0	0	None	0	0

C. E. ROY, INSPECTOR.

Labelled 'Puritan Brand'; Grantham Preserve Works, St. Kitts.	15·28	7·66	1·20	Doubt- ful ...	None	Present	Present	Not labelled 'mix- ture,' and therefore adulterated.
" " "	23·60	3·26	1·20	None ...	" "	" "	" "	" "
Labelled 'Canada First'; Ayliner Canning Co.	21·68	3·34	0·90	" "	" "	" "	" "	" "
Labelled 'Favorite Hot Stuff.'	11·30	3·26	1·20	Present.	" "	" "	None	Adulteration doubt- ful.

RESULTS OF EXAMINING 49

DISTRICT OF ST. HYACINTHE-

Date of Collection	Nature of Sample	Number of Sample	Name and Address of Vendor	Cost	Name and Address of Manufacturer or Furnisher
				Quantity	Value
1906.					
Aug. 21.	Tomato catsup	4764	O. Daviault, Berthier 3 bots., ville, Que.	0.45	T. A. Lytle Co., Ltd., Toronto, Ont.
" 21	" "	4774	L. Provost, L'Epiplatie, 3 " Que.	0.39	Aylmer Canning Co., Aylmer, Ont.
" 22	Tomato catsup	478	P. N. Chailleg, Shawinigan 3 Falls, Que.	0.30	Not known,
" 23	" ketchup	479	Grenier et Paquin, Grand Mere, Que.	0.30	Jos. Lamontagne, Montreal, Que.
	" " " Tiger Brand."				

DISTRICT OF MONTREAL

Aug. 28	Tomato catsup	31511	J. A. Perreault & Co., 403 Plessis St., Montreal.	0.15	Vendors,
" 28	" ketchup	31512	A. A. Lapierre, 773 Notre Dame East, Montreal.	0.25	"
" 28	" catsup	31513	Joseph Dubois, 551 Notre Dame, Maisonneuve, Que.	0.30	W. Lorion, La Boerde a Plouffe, Que.

Sept. 1	" "	31514	Antoine St. Denis, Ste. 3 Anne de Bellevue, Que.	0.30	Aylmer Canning Co., Aylmer, Ont.
" 11	" ketchup	31515	McRae Bros., Richmond, 3 Que.	0.60	Lyon Silverman, Montreal
Nov. 22	catsup	26892	St. Lewis Preserving Co., 3 Colonial Ave., Montreal.	0.25

DISTRICT OF OTTAWA

Sept. 10	Tomato catsup	29363	Alex. Larose, 128 Queen St. West, Ottawa.	0.25	Aylmer Canning Co., Aylmer, Ont.
" 10	Catsup	29371	Kennedy & Co., Wellington St., Ottawa.	0.60	Pure Gold Co., Toronto, Ont.
" 10	" "	29372	" " " 3 "	0.60	" " "
" 10	Tomato catsup	29373	" " " 3 "	0.75	T. A. Lytle & Co., Toronto, Ont.
Nov. 27	" "	32305	D. J. McCullough, 231 Kent St., Ottawa.	0.20	Canada Preserving Co., Ltd., Hamilton, Ont.

SAMPLES OF TOMATO CATSUP—*Continued.*

J. C. ROULEAU, INSPECTOR.

RESULTS OF ANALYSIS.

Inspector's Report.	Total Solids.	Total Ash.	Acidity stated as Acetic Acid.	Coal Tar Dyes.	Preservatives.			Remarks by the Chief Analyst.
	p. c.	p. c.	p. c.	Salicylic Acid.	Benzoic Acid.	Sulphurous Acid.		
Labelled 'Sterling Brand.'	18.04	2.42	1.20	Present, None	Present, Present	Adulteration doubtful.		
Prepared from fresh ripe tomatoes; delightfully blended with spices.	26.16	2.98	1.20	Doubtful	None	Doubtful	None	Unadulterated.
Label does not mention name of maker.	9.12	2.62	1.32	Present, None	None	None	None	Adulteration doubtful.
Put up in bottles that had been used for cocoa manjani of Paris. Manufacturer's name not marked on label.	8.62	2.58	0.96	None	None	None	None	" "

J. J. COSTIGAN, INSPECTOR.

Taken from stock at factory	7.44	3.40	0.90	Present, Present, None	None	None	Adulteration doubtful.
Taken from stock at factory; labelled 'Celebrated Club Brand.'	10.90	2.70	1.32	None	None	None	" "
Bears a certificate by Prof. J. E. Morrison that samples have been found 'pure, free from all injurious colouring matter and antiseptic.'	11.34	3.10	1.02	None	None	Present	" "
'Canada First' brand	21.80	3.14	1.20	None	None	None	Not marked as a 'mixture,' and therefore adulterated.
1905 stock; labelled 'New Pi. 298.'	16.88	1.84	0.60	Present	None	None	Adulteration doubtful.
No colouring; wholesale price, 90c. per doz.; marked 'Compound.'	17.80	2.30	0.72	None	Present, None	None	Unadulterated; admixture being declared.

A. E. SANDERSON, INSPECTOR.

Labelled 'Canada First' brand; prepared from Pt. fresh ripe tomatoes; last year's make.	26.44	2.92	0.84	None	None	Present, None	Not labelled 'mixture,' and therefore adulterated.
Labelled 'Pure Gold Sweet Catsup.'	8.56	2.58	0.60	Present	None	None	Adulteration doubtful.
Labelled 'Pure Gold Hot Stuff.'	17.46	2.10	0.96	None	None	None	Not marked 'mixture,' and therefore adulterated.
Labelled 'Canada Brand.'	20.90	2.82	0.90	Present	None	Present	Adulteration doubtful.
Labelled 'Graham's Lilly Paand Tomato Catsup.' Genuine homemade; absolutely pure. Trade mark registered.	13.02	3.12	0.66	None	None	Doubtful	None

RESULTS OF EXAMINING 49

DISTRICT OF KINGSTON—

Date of Collection	Nature of Sample.	Number of Sample.	Name and Address of Vendor.	Quantity.	Cost.	Name and Address of Manufacturer or Furnisher.
					\$ c.	
1906.						
Aug. 21.	Catsup	29483	C. S. Litton, Alfred St., Kingston, Ont.	3 bots.	0 45	H. J. Heinz, Pittsburg, Pa.
" 21.	Tomato catsup.	29490	E. Ostler, Johnston St., Kingston, Ont.	3 "	0 30	The T. A. Lytle Co., Toronto, Ont.
" 21.	" "	29491	H. A. Smith, Brock St., Kingston, Ont.	3 "	0 30	Aylmer Canning Co., Aylmer, Ont.
" 21.	" ketchup.	29495	F. A. Allan, Alfred St., Kingston, Ont.	3 "	0 45	Standard Canning Co., Hamilton, Ont.

DISTRICT OF TORONTO—

Sept. 4	Tomato catsup.	30171	J. Butcher, corner Queen and John Sts., Toronto.	3 bots.	0 45	Oshawa Canning Co., Oshawa, Ont.
" 4	" "	30173	W. R. Black, 360 Queen St., Toronto.	3 cans.	0 30	Bought from Eby, Blam & Co., Toronto.
" 4	" "	30175	Wm. Davies & Co., 418 King St. East, Toronto.	3 bots.	0 30	Vendors
" 5	" "	30179	T. Eaton & Co., Yonge St., Toronto.	3 tins.	0 15	Essex Canning and Preserving Co., Ltd.
" 5	" "	30181	R. Simpson & Co., Yonge St., Toronto.	3 bots.	0 30	Aylmer Canning Co., Aylmer, Ont.

DISTRICT OF LONDON—

Aug. 24.	Tomato catsup.	30152	George A. Nairen, Windsor, Ont.	3 bots.	0 30	Somerville & Co., Hamilton, Ont.
" 25.	" "	30160	John McCoville & Son, Chatham, Ont.	3 "	0 30	Aylmer Canning Co., Aylmer, Ont.
" 25.	" ketchup.	30164	Edward O'Flaherty, Stratford, Ont.	3 "	0 30	A. F. McLaurin Co., Toronto, Ont., agents for Canada.
" 27.	" catsup	30167	J. W. Irwin, Clinton, Ont.	3 "	0 30	John Sloane, wholesale grocer, Toronto, Ont.

DISTRICT OF MANITOBA—

Nov. 23	Tomato catsup	25921	White Star Manufacturing Co., Winnipeg.	1 quart.	0 15	Vendors
" 23	" "	25922	Blackwoods, Ltd., Winnipeg.	1 peg.	0 25	"
" 23	" "	25923	The Dyson Co., Winnipeg.	1 "	0 15	"
" 23	" "	25924	Jobin, Marrin Co., Winnipeg.	2 lbs., 1 peg.	0 10	Delhi Fruit and Vegetable Canning Co., Delhi, Ont.

SAMPLES OF TOMATO CATSUP—Continued.

J. HOGAN, INSPECTOR.

RESULTS OF ANALYSIS.

Inspector's Report.	RESULTS OF ANALYSIS.						Remarks by the Chief Analyst.
	Total Solids.	Total Ash.	Acidity stated as Acetic Acid.	Coal Tar Dyes.	Preservatives.		
	p.c.	p.c.	p.c.		Salicylic Acid.	Benzoic Acid.	Sulphurous Acid.
	19.40	2.80	1.20	None . . .	None . . .	Present.	None . . . Not marked 'mix- ture,' and therefore adulterated.
Labelled 'Canada Brand.'	16.80	2.80	1.32	Present.	" . . .	Doubt- ful.	Present. Adulteration doubt- ful.
Labelled 'Canada First.'	23.84	3.30	0.90	None . . .	" . . .	" . . .	Trace . . Unadulterated.
Labelled 'Old Church.'	24.56	7.80	0.90	" . . .	" . . .	Present.	None . . . Not marked as a 'mix- ture,' and therefore adulterated.

T. KIDD, ACTING INSPECTOR.

'Royal Navy' brand . . .	29.04	3.86	0.72	Present.	None . . .	None . . .	None . . . Adulteration doubt- ful.
Labelled 'Lorne' brand, West Lorne Canning and Evaporating Co.'	13.34	3.56	0.78	" . . .	" . . .	" . . .	" . . .
Labelled 'Davies, Toronto' Essex Brand Canning and Preserving Co.	17.80	2.34	1.32	" . . .	" . . .	" . . .	" . . .
Marked 'Canada First' . .	22.84	2.74	0.78	" . . .	" . . .	Present.	" . . . Not labelled 'mix- ture,' and therefore adulterated.

T. KIDD, INSPECTOR.

Branded 'Champion' . . .	14.82	4.02	0.90	Present.	None . . .	Present.	None . . . Adulteration doubt- ful.
Called 'Canada First' . . .	23.92	2.00	0.90	None . . .	" . . .	" . . .	Present. Not labelled 'mix- ture,' and therefore adulterated.
Labelled 'Wade's Home- made; The Tip-top Ketchup Co., Cincinnati, Ohio, U.S.A.'	12.50	2.70	0.96	" . . .	" . . .	" . . .	None . . . None . . . Unadulterated.
'Defiance' brand	26.70	3.20	0.78	" . . .	" . . .	" . . .	" . . .

W. M. CONKLIN, INSPECTOR.

	10.16	1.60	0.90	Present	None . . .	Doubt- ful.	None . . . Adulteration doubt- ful.
	15.84	2.30	1.20	None . . .	" . . .	Present.	" . . . Not labelled 'mix- ture,' and therefore adulterated.
	9.74	2.14	1.20	Present.	Present.	None . . .	Adulteration doubt- ful.
	20.62	1.86	1.08	None . . .	None . . .	" . . .	Unadulterated.

RESULTS OF EXAMINING 49

DISTRICT OF CALGARY

Date of Collection	Nature of Sample	Number of Sample	Cost.		
			Name and Address of Vendor	Quantity	Name and Address of Manufacturer or Furnisher
1906.					
Sept. 12	Tomato catsup	28696 L. T. Newburn, whole-3 bots., sale, Calgary.	0 45	T. A. Little Co., Ltd., Toronto, Ont.	
" 12	" "	28697 G. E. & J. Galt, whole-3 " sale, Calgary.	0 45	Taylor & Pringle, Owen Sound, Ont.	

DISTRICT OF BRITISH COLUMBIA

Aug. 29	Tomato catsup	28176 W. H. Malkin Co., Ltd., 3 bots., wholesale grocers, Van- couver, B.C.	0 65	Libby, McNeill & Libby, Chicago, U.S.A.
29	" ketchup	28181 H. Albert, Carroll St., re-3 " tail, Vancouver, B.C.	0 75	Brady, Houston Packing Co., Victoria, B.C.
0	" "	28183 The London Grocery, Gran- ville St., retail, Van- couver, B.C.	0 45	Standard Canning Co., Hamilton, Ont.

SAMPLES OF TOMATO CATSUP—*Concluded.*

W. FLETCHER, INSPECTOR.

RESULTS OF ANALYSIS.

Inspector's Report.	Total Solids.			Acidity stated as Acetic Acid.	Coal Tar Dyes.	Preservatives.			Remark by the Chief Analyst.
	Total Ash.	p.e.	p.e.			Salicylic Acid.	Benzoic Acid.	Sulphurous Acid.	
Labeled 'Sterling Brand'.	Pt. 14.86	2.70 1.56	1.20	Present.	None	None	Present.	None	Adulteration doubtful.
.....	Pt. 19.80	3.00 1.64	0.96	"	Present.	"	None	"	"

E. B. PARKINSON, INSPECTOR.

Labelled 'Libby's'	18.17	2.50	1.20	None	None	None	None	Unadulterated.
Pt. 16.54	16.54	3.60	0.90	Present.	"	Present.	"	Adulteration doubtful.
'Bar Harbour' brand, finest quality catsup in the market.	25.50	3.60	0.90	Present.	"	Present.	"	"
Labelled 'Old Church' . . .	12.44	2.44	0.60	"	"	"	"	"

