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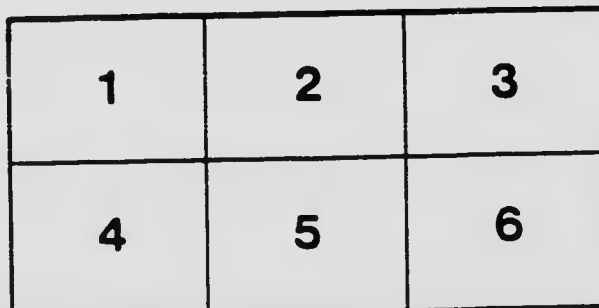
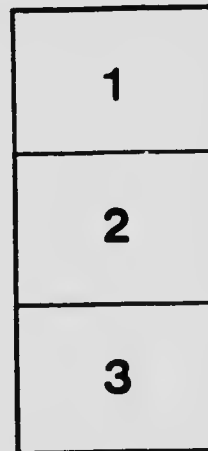
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LABORATORY
OF THE
INLAND REVENUE DEPARTMENT
BULLETIN No. 96
JAMS AND JELLIES.

OTTAWA, May 6, 1904.

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

SIR,—In accordance with your instructions of 14th January last, a collection was made of Jams and Jellies, in the course of that and the following month in the various collection districts of the Dominion. The accompanying tabulated statement (I) gives full particulars regarding the origin and character of each sample in the order as collected by the various food inspectors, and as the districts succeed each other from east to west. Table I also contains the final result of examining each sample briefly stated by Mr. A. McGill, who, assisted by Mr. Alphonse Lemoine, carried out the analyses. The details of the latter are given in a series of additional tables in which the various samples have been classified according to their nature as follows :

- A. Raspberry jam.
- B. Strawberry jam.
- C. Plum jam.
- D. Peach jam.
- E. Miscellaneous jams.
- F. Jellies.

The analytical results given in these tables regarding the samples may be connected with the descriptions given in Table I by means of each serial number.

The total number of samples collected was 78 but five consisted of "jelly powders" which certain food inspectors purchased by mistake. The number should therefore be 73 but, as a matter of fact, 74 analyses were made owing to sample 2,410, the duplicate of which did not correspond in character with the main sample. The following statement is a classification of the whole 74 samples, based upon the analytical results, it being considered that the presence of foreign fruit, or large percentages of glucose constitutes adulteration :—

	Genuine.	Doubtful.	Adul- terated.	Total.
A. Raspberry jam.....	2	1	16	19
B. Strawberry jam.....	1	1	17	19
C. Plum jam.....	3	1	8	12
D. Peach jam.....	0	2	5	7
E. Miscellaneous.....	0	0	2	2
F. Jellies.....	8	0	7	15
	14	5	55	74

The number of adulterated samples in this collection is therefore equal to 74.3 per cent. This figure must be regarded as below the truth, since none of the samples were condemned on account of the use only of preservatives or artificial dyes. The position of this branch regarding the adulteration of jams and jellies may here be stated. They are, as Webster defines jam, the products of boiling fruits with sugar and water. The only word in this definition about which any doubt can exist is the word "sugar". This is defined by the same authority as 'a sweet crystalline substance, obtained from certain vegetable products, as the sugar cane, maple, beet, sorghum, and the like.' This identifies sugar as the substance known to chemists under the names cane sugar, or sucros. Commercial glucose is not grape sugar, but a product of the action of acids on starch, of very indefinite composition, always containing, as well as reducing sugars, dextrine, starch, water, &c. Every grocer and consumer understands quite well what is meant by sugar, and the substitution of commercial glucose for it in ordinary trade would not be tolerated. It is also to be remembered that reputable manufacturers of jams and jellies use only cane sugar in preserving.

Similar views to the foregoing prevail in other countries and more especially among the Boards of Health in the United States.

In general the rulings of the latter are to the effect that fruit jellies, preserves, canned fruits &c., must consist of the fruit specified on the label of the package, preserved only with cane sugar, and must not contain artificial flavours, colouring matters or preservatives. If such articles contain any substitute for the fruit, or any material to make bulk or weight they are considered to be adulterated.

I have the honor to be, sir,

Your obedient servant,

THOMAS MACFARLANE,

Chief Analyst.

INSPECTION OF JAMS AND JELLIES—TABULATED STATEMENT (I.)

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.		Name and Address of Manufacturer or Furnisher.	Opinion of Analyst.	Bottle No.
				Quantity.	Price.			
1904.			<i>District of Halifax, etc.</i>		\$ cts.			
Jan. 27	Cranberry jam	20429	John Riley, Windsor, N.S.	3 jars	0 45	Charlottetown Preserving Co., P. E. I.	Adulterated, containing glucose and a coal-tar dye	58
"	Greengage plum jam	20425	Grahame & Co., Windsor, N.S.	3 "	0 60	Cross & Blackwell, London, Eng	Genuine	59
"	Plum jam	20427	Shard Bros., Windsor	3 "	0 25	Canada Biscuit Co., Toronto	Contains a little glucose, and a coal-tar dye. Otherwise genuine	40
"	"	20426	W. Smith, Kentville, N.S.	3 "	0 45	Upton's	Contains some glucose and a preservative. Adulterated	41
"	Red currant jelly	20429	" "	3 "	0 60	A. Cairns, Eng.	Contains salicylic acid. Otherwise genuine	60
"	Apple jelly	20430	DeWolfe & Lamont, Kentville, N.S.	3 "	0 45	Miss Taylor, Kentville, N.S.	Genuine	61
"	Plum jelly	20431	" "	3 "	0 40	A. Gooderville & Sons, Welland, Ont.	Adulterated with glucose, and contains salicylic acid	62
"	Peach jam	20439	Burgess Quinn, Halifax	3 "	0 30	Canada Preserving Co., Hamilton, Ont.	Adulterated, containing glucose	51
			<i>District of Prince Edward Island.</i>					
"	Jam	24401	A. Gates & Co., Charlottetown	3 crocks	0 26	Upton's, Montreal	Adulterated with glucose and dyed	31
"	Jelly	24405	J. Ching, Summerside	3 "	0 45	Central Preserving Co., Boston, Mass.	Adulterated with glucose	71
"	Jam	24407	J. N. Locke, Summerside	3 tins	0 54	J. W. Windsor, Montreal	Adulterated with glucose, is dyed and contains salicylic acid	11
"	Jelly	24408	Sanderson & Co.	3 crocks	0 84	Cross & Blackwell, London, Eng.	Genuine	72
			<i>District of New Brunswick.</i>					
"	Strawberry jam	23905	Baird & Peters, St. John, N.B.	3 jars	0 30	Simcoe Canning Co., Simcoe, Ont	Adulterated with glucose and contains a coal-tar dye	28
"	Red currant jelly	23906	W. A. Porter, Cor. Waterloo and Union Sts., St. John	3 "	0 90	Chas. Southwell & Co., London, Eng.	Genuine	66

INSPECTION OF JAMS AND JELLIES—TABULATED STATEMENT (I.)—Continued.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.		Name and Address of Manufacturer or Furnisher.	Opinion of Analyst.	Retail No.
				Quantity.	Price.			
1901.								
Jan. 26	Plum jam.....	23811	District of New Brunswick—Con. Chas. C. Phillips, Cor. Douglas Ave. and Main St., St. John.....	3 jars.	\$ cts. 0 54	H. Goodwillie & Sons, Willand, Ont.....		
"	Crab apple jelly...	2312	R. O. McLean & Co., 253 Main St. Moncton, N.B.....	3 tumb's	0 45	Yvesben	Adulterated with glucose and con- tains salicylic acid	49
Feb. 4	Peach jam.....	23817	Hugh McKenna, King St., St. Stephen	3 jars.	0 45	R. Goodwillie & Sons, Willand, Ont.....	Cecumine	67
"	Cranberry jelly...	23820	Enoch G. Hoben, York St., Fredericton	3 tumb's	0 45	David C. Paree, Queensbury, York.....	Adulterated with glucose and con- tains salicylic acid	55
Jan. 25	Raspberry jam....	23649	George Beausseli, Terrebonne, Que. <i>District of Quebec.</i>	4 lbs.	"	J. W. Windsor, Montreal.....	Gemine	68
"	Strawberry jam...	23655	E. J. Carillon, Joliette, Que.....	3 jars.	0 45	S. P. Champoux, Joliette.....	Adulterated with glucose and for eign fruit; contains salicylic acid and a coal tar dye.	6
"	Raspberry jam....	23658	Beard Roy, Joliette.....	1 can.	0 15	W. B. Newcome & Co., Montreal		24
"	Plum jam.....	23659	A. L. Cause, Berthierville.....	1 lb.	0 40	Canada Preserving Co., Hamilton	Adulterated with glucose and con- tains salicylic acid.	7
"	Raspberry jam....	23660	Coulombe & Lefebvre, Berthierville.....	1 can.	0 15	Jos. Lamoureux, Montreal	Adulterated with glucose and is dye.	45
"	Strawberry jam...	23664	Bellefeuille & Giroux, Trois Rivières.....	1 pint.	0 50	Royal Packing Co., Montreal.....	Adulterated with glucose or foreign fruits; is dyed	8
"	Plum jam.....	23665	S. H. Frigon & Cie, Trois Rivières.....	1 "	0 50	J. A. Ferrault, Montreal	Contains glucose and contains sali- cyclic acid, but is sold as compound	23
"	".....	23667	L. Brunelle & freres, Trois Rivières.....	3 cans	0 45	Jos. Lamoureux, Montreal	Adulterated with glucose and con- tains salicylic acid	46
"	Strawberry jam...	23668	L. Gingras, 304 Richelieu St., Quebec.	3 jars.	0 30	L. Letourneau, Quebec	Adulterated with glucose and con- tains a preservative and a dye.	47
"	Raspberry jam....	23673	Ches. J. Bolly, 404 St. Valier, Que- bec.....	2 cans.	0 30	Montreal Canning and Preserv.	Adulterated with glucose and con- tains a coal tar dye.	56

"	29	Strawberry jelly	23078	Theo. Smyth, Quebec	3 pks.	0 30	ing Co. Weir Specialty Co., agents, Toronto.	Adulterated with glucose and fig-eign fruit tissues.	9
"	4	Plum jam	23080	J. V. Montplaisir, Drummondville	1 jar	0 45	Himself	Ladwell's "Oliver's Concentrated Jelly Crystals"	46
"	4	Strawberry jam	23087	Alex. Dufrenoy, St. Joseph de Hyacinthe	2 cans	0 28	J. A. Perrault, Montreal	Adulterated with glucose and fig-eign tissues; is dyed.	27
Jan.	20	Upton's straw-berry jam	23246	A. Fournier, 1789 St. Catherine St.	3 jars	0 30	Uptons	Adulterated with glucose and contains a coal tar dye	22
"	20	Graham's rasp-berry jam	23287	C. E. Acethier, 1754 St. Catherine St.	3 "	0 30	Canada Preserving Co.	Adulterated with glucose and fig-eign fruit tissue; is dyed.	3
"	20	Strawberry jam	23288	L. G. Thoin, 487 LaGauchetiere St.	3 "	0 15	W. R. Newcome Co., 84 Youville Square, Montreal	Adulterated with glucose and contains salicylic acid	23
"	21	Plum jam	23289	M. F. Lafortune, 116 St. Maurice St.	3 "	0 30	Lamoursaut & Co.	Adulterated with glucose and is dyed.	42
"	21	Raspberry jelly	23290	Pilons & Meilleur, 114 St. Maurice St.	3 "	0 15	Not known	"	64
"	21	Mrs. Luke's home-made crab apple jelly	23291	A. Leamy, 2021 Notre Dame St.	3 "	0 30	Mrs. Luke, Montreal	Genuine	62
"	21	Crown brand plum jam	23292	"	3 "	0 30	Uptons	Adulterated with glucose and is dyed.	43
"	21	Lily brand rasp-berry jam	23293	M. Kilkerry, 701 Craig St.	3 "	0 30	The Royal Packing Co., Montreal	Contains glucose, contains salicylic acid, and is dyed.	44
"	22	Peach jam	23294	Joseph Denon, 53 Jurons St.	3 "	0 30	"	Adulterated with glucose and for fig-eign fruit	4
"	22	Raspberry jam	23295	A. Masson, 1472 St. Cath-erine St.	2 "	0 50	Paquet et Paquet, Montreal	Adulterated with glucose	53
"	22	Peach jam, King's brand	23296	T. Levesque, 1522 St. Catherine St.	3 "	0 45	"	"	5
"	28	asperry jam	23297	P. J. Piery, 1360 Notre Dame St.	3 "	0 45	"	"	54
"	28	asperry jam	23298	Peter Glavey, 37 York St., Ottawa.	2 1/2 lbs.	0 38	Upton's; taken from a 1-lb. jar.	Adulterated with glucose and for fig-eign fruit. Dyed.	34
"	29	Peach jam	25017	P. L. Foisy, 367 Dalhousie St., Ottawa.	3 "	0 30	D. C. Brown & Co.; taken from a 1-lb. jar.	Adulterated with glucose and dyed; contains very little fruit	15
"	1	Red currant jam	25018	Wm. H. Hodson, King St., Brockville.	3 jars	0 30	Upton's	A little glucose. Is dyed.	56
"	1	Strawberry jam	25019	H. John, Princess St., Kingston	3 "	0 30	Simcoe Canning Co.	Adulterated with glucose, and dyed.	59
"	1	Raspberry jam	25020	James Crawford, Princess St., Kingston	3 "	0 30	Hamilton Preserving Co.	Adulterated with glucose and for fig-eign fruit. Contains salicylic acid and a coal tar dye	25
"	1	Red currant jelly	25021	W. R. McCrae & Co., Box 2, Kingston	3 "	0 30	"	Adulterated with glucose and for fig-eign tissues. Is dyed.	16
"	1	Raspberry jam	25022	W. R. McCrae & Co., Box 2, Kingston	3 "	0 30	McCrae & Sons, Welland	Adulterated with glucose, and contains salicylic acid	74

*The word "compound" is printed on bottom of label, barely noticeable.

INSPECTION OF JAMS AND JELLIES TABULATED STATEMENT (L) - Concluded.

Date of Collection.	Nature of Sample.	No. of Samples.	Name and Address of Vendor.	Cost.		Opinion of Analyst.
				Quantity.	Price.	
1904.			<i>Toronto District.</i>		8 cts.	
Feb.	2 Raspberry jam	25042	Jno. Irvine, 552 Queen W., Toronto.	3 jars.	0 30	J. S. Rosemary Co., Hamilton. Adulterated with glucose and foreign tissues. Contains salicylic acid.
"	2 Strawberry jam	25043	J. Bond, 559 Queen W., Toronto.	3 "	0 30	Adulterated with glucose
"	2 Raspberry jam	25044	A. Ganathu & Co., 400 Queen W., Toronto.	3 "	0 25	Adulterated with glucose and foreign fruit tissues. Is dyed.
"	2 Strawberry jam	25045	C. Lee, 101 King E., Hamilton.	3 "	0 30	Contains some glucose. Doubtful
"	3 Raspberry jam	25046	"	3 "	0 30	Adulterated with glucose and foreign fruit
"	3 Peach jam	25047	"	24 lbs.	0 25	Contains a little glucose. Doubtful
"	3 Plum jam	25048	J. H. Horning, 92 John St., Hamilton.	3 jars	0 30	A little glucose and dyed. Doubtful
"	3 Strawberry jam	25049	"	3 lbs.	0 30	Adulterated to a slight extent with glucose and dyed.
Jan.	23 Jelly	22185	<i>London District.</i> B. Gunn, Seaforth.	3 pks	0 30	Hamilton Coffee & Spice Co., Hamilton.
"	2 Strawberry jam	22186	E. O'Flaherty, Staaford.	3 "	0 30	Labelled "McLaren's invincible powdered vanilla jelly."
"	2 Peach jam	22187	Servaggio Bros., Guelph.	3 pots.	0 30	Adulterated with glucose, and dyed
"	2 Red currant jelly	22188	J. A. McCrae, Guelph.	3 "	0 30	Adulterated with glucose. (Genuine.)
"	2 Pure Gold Jelly	22189	T. S. Armstrong, Fergus, Ont.	3 pks	0 25	Labelled "Pure Gold Jelly prepared in a finely powdered form."
"	2 Orange	22190	"	3 "	0 25	Labelled "Oriental Jelly Powder. Genuine jam, contains salicylic acid."
Feb.	6 Raspberry jam	22203	John ... tie, Seaforth.	3 jars	0 30	Labelled "Crown Jelly in powdered form."
"	8 Grape jelly	22206	Sturdy & Co., Goderich.	3 "	0 30	

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21 22 23 24

2

	9	Jelly	28925 J. Bower & Co., Brandon	1 1/2	0 30	White Star Mfg. Co., Winnipeg	Adulterated with glucose; is preserved with salicylic acid, and is dyed	69
	10	Jam	28929 W. J. Wilcox & Co., Virden	1 1/2	0 25	Upton's, Ham	No description or claim with this sample	70
	12	Strawberry jam	28932 Hardy & Buchanan, Winnipeg	3	0 75	"	Contains some glucose and a preservative. Insoluble	70
	12	Jelly	28934 Williams Bros., Winnipeg	3	0 30	White Star Mfg. Co., Winnipeg	Contains much glucose; is dyed and contains salicylic acid. Adulterated	70
<i>Calgary District.</i>								
Feb.	10	Raspberry jam	21778 Groat & Elliott, Strathcona, Alta.	3	0 75	Ely Blands, Toronto, Ont.	Genuine jam; but contains a preservative, and is dyed	32
"	11	Strawberry jam	21782 H. N. Dodd, Edmonton, Alta.	3	0 75	Canada Preserving Co., Hamilton	Adulterated with glucose and dyed	32
<i>British Columbia District.</i>								
"	2	"	24922 Geo. Wagg, Vancouver	15	1 50	J. W. Windlar, Montreal	Adulterated with glucose and for eggs fruit; contains salicylic acid, and is dyed	12
"	4	Raspberry jam	24923 McCulloch Bros., Vancouver	15	1 40	Sincoe Canning Co., Ontario	Adulterated with glucose and for eggs fruit; is dyed	12
"	4	Red currant jelly	24925 City Grocery Co., Vancouver	15	1 05	Windlar, Montreal	Adulterated with starch glucose; and is dyed	73
"	5	Raspberry jam	24926 J. P. Nightingale & Co., Vancouver	15	1 50	Pure Cold Mfg. Co., Toronto	A genuine jam, but contains foreign fruit tissue	13
"	5	"	24927 Londou Grocery Co., Vancouver	15	1 50	B.C. Fruit Canning & Coffee Co.	Adulterated with glucose and contains salicylic acid	14
"	5	Strawberry jam	24928 F. Wright, Vancouver	15	1 50	Odell & Morris, Victoria, B.C.	Genuine, but contains salicylic acid	33

A.—RASPBERRY

Serial Number.	Departmental Number.	SOLIDS, PER CENT.			Water.	ALCOHOL PRECIPITATE.		POLARIZATION.		
		Insoluble.	Soluble.	Total.		Per Cent.	Character.	Direct.	Invert.	Difference.
1	21778	4.24	50.52	54.76	45.24	2.80	Clear and free	+3.0	-7.7	10.7
2	22203	5.85	63.00	68.85	31.15	1.04	" ..	-1.0	-9.9	8.9
3	23287	2.34	62.90	65.24	34.76	21.16	Milky, sticky.	+31.0	+16.5	14.5
4	23294	1.74	55.50	57.24	42.76	30.73	" ..	+35.0	+22.0	13.0
5	23296	1.78	69.12	70.90	29.10	30.91	" ..	+69.0	+64.9	4.1
6	23649	1.58	67.66	69.24	30.76	24.70	" ..	+57.0	+46.3	10.7
7	23656	1.06	73.50	74.56	25.44	2.85	" ..	+43.0	+29.7	13.3
8	23660	3.75	71.00	74.75	25.25	19.00	" ..	+53.0	+32.5	20.5
9	23673	1.92	67.04	68.96	30.14	38.53	" ..	+40.0	+37.4	2.6
*10	24401	1.56	64.50	66.06	33.94	30.79	" ..	+33.0	+20.9	12.1
11	24407	1.19	72.16	73.35	26.65	51.64	" ..	+65.0	+55.0	10.0
12	24923	1.86	70.54	72.40	27.60	31.09	Milky, sticky.	+39.4	+29.7	9.7
13	24926	1.77	67.66	69.43	30.57	2.15	Clear and free	+2.0	-11.7	13.7
14	24927	1.18	67.65	68.83	31.17	38.89	Milky, sticky.	+37.0	+23.8	13.2
15	25016	0.19	73.50	73.69	26.31	64.56	" ..	+81.5	+71.5	10.0
16	25020	1.49	62.90	64.39	35.61	20.01	" ..	+49.5	+47.3	2.2
17	25042	1.41	54.36	55.77	44.23	10.68	" ..	+34.0	+25.3	8.7
18	25044	3.00	57.18	60.18	39.82	23.35	" ..	+14.0	+9.9	4.1
19	25046	1.49	59.98	61.47	38.53	16.20	" ..	+25.0	+10.5	14.5

* The duplicate of this number is a Strawberry jam.

NOTE.—Jams should be made with cane sugar, unless a formula defining the composition is given.

April 19, 1904.

JAM, APRIL, 1904.

SUGARS.			Preserva- tives.	Coal Tar Dyes.	Remarks.
Cane.	Reduc- ing.	Total.			
7 0	37 0	44 0	Salicylic....	Present....	Genuine fruit. Genuine jam, but contains a preservative, and is artificially dyed.
5 8	46 6	52 4	"	None	Raspberry fruit only. Genuine jam, with a preservative.
9 4	34 3	43 7	None	Present....	Raspberry and foreign tissue; apparently apple. Adulterated.
8 5	27 2	35 7	"	None	Raspberry and foreign tissue; apparently apple. Adulterated.
2 7	34 1	36 8	"	"	Genuine fruit. Adulterated with glucose.
7 0	29 9	36 9	Salicylic....	Present....	Raspberry and foreign tissue; apparently apple. Adulterated.
8 7	41 5	50 2	"	"	Genuine fruit. Adulterated.
13 3	26 1	39 4	None	"	Raspberry tissue and pips of foreign fruit; apparently fig or strawberry. Adulterated.
1 7	44 4	46 1	"	Doubtful...	Raspberry tissue and foreign tissue (Apple?). Adulterated.
7 9	36 6	44 5	Salicylic....	Present....	Genuine fruit. Adulterated with glucose, and dyed.
6 5	33 5	40 0	"	"	Genuine fruit. Adulterated.
6 4	37 7	44 1	None	"	Raspberry tissue and apparently apple pulp. Adulterated.
8 9	46 9	55 6	"	None	Raspberry tissue and foreign tissue, apparently apple. A genuine jam, but not entirely of raspberry fruit.
8 5	40 7	49 2	Salicylic....	"	Genuine fruit. Adulterated.
6 5	34 0	40 5	None	Present....	Raspberry tissues. Adulterated, contains very little fruit.
1 4	37 5	38 9	"	"	Raspberry and foreign tissues, apparently apple pulp. Adulterated.
5 7	28 2	33 9	Salicylic....	None	Raspberry and foreign tissue, apparently apple. Adulterated.
2 7	44 0	46 7	None	Present....	Raspberry tissues and foreign tissues (Apple?). Adulterated with glucose, etc.
9 4	39 8	49 2	"	None	Raspberry and foreign tissue, apparently apple. Adulterated with glucose, etc.

A. MCGILL.

B.—STRAWBERRY

Serial Number.	Departmental Number.	SOLIDS, PER CENT.			Water.	ALCOHOL PRECIPITATE.		POLARIZATION.		
		Insoluble.	Soluble.	Total.		Per Cent.	Character.	Direct.	Invert.	Difference.
20	21782	1.01	63.82	64.83	35.17	35.3	Sticky.....	+41.5	+21.5	20.0
21	22188	1.71	54.44	56.15	43.85	18.9	".....	+24.5	+10.5	14.0
22	23286	0.69	64.94	65.63	34.37	47.9	".....	+32.0	+18.7	13.3
23	23288	0.66	68.82	69.48	30.52	50.1	".....	+30.5	+29.7	9.8
24	23655	1.01	70.62	71.63	28.37	13.8	".....	+39.5	+19.8	12.7
25	23664	1.93	72.26	74.19	25.81	26.5	".....	+60.0	+45.7	14.3
26	23668	1.24	60.94	62.18	37.82	33.3	".....	+60.0	+58.9	1.1
27	23687	2.96	71.80	74.76	25.24	19.1	".....	+52.0	+35.2	16.8
28	23805	2.21	60.10	62.31	37.69	19.2	".....	+38.5	+24.4	14.1
29	23929									
30	23932	2.06	61.30	63.36	36.64	4.69	Sticky.....	+33.0	+19.8	13.2
31	24401	0.96	58.60	59.56	40.44	11.9	".....	+20.5	+18.2	12.3
32	24922	0.67	73.20	73.87	26.13	42.8	".....	+61.0	+47.9	13.1
33	24928	2.21	71.06	73.27	26.71	1.4	Free.....	+16.0	-12.7	28.7
34	25015	1.01	69.74	70.75	29.25	9.4	Sticky.....	+26.5	+11.0	15.5
35	25019	1.69	64.18	65.87	34.13	23.4	".....	+49.0	+44.6	4.4
36	25043	2.23	70.82	73.05	26.95	22.2	".....	+51.0	+41.8	9.2
37	25045	1.75	59.84	61.59	38.41	5.9	".....	+16.5	+8.8	7.7
38	25049	2.05	63.30	65.35	34.65	7.8	".....	+23.0	+10.4	12.6

*This sample is contained in a pasteboard carton, which has been opened, and about two-thirds of the sale.

†The duplicate of this number is a raspberry jam.

April 19, 1904.

JAM, APRIL, 1904.

SUGARS.			Preserva- tives.	Coal Tar Dyes.	Remarks.
Cane.	Reduc- ing.	Total.			
13.0	25.0	38.0	None.....	Present.....	Strawberry tissues only. Adulterated.
9.1	32.3	41.4	".....	".....	" " " "
8.6	39.2	47.8	".....	".....	" " " "
6.5	54.3	60.8	Salicylic....	Doubtful....	" " " "
8.3	42.3	50.6	".....	None.....	" " " "
9.3	33.2	42.5	".....	Present.....	" and foreign tissues "
0.7	32.8	33.5	None.....	".....	tissues only "
10.9	32.4	43.3	".....	".....	" and foreign tissue. Apparently apple. Adulterated.
9.2	27.0	36.2	".....	".....	tissues only. Adulterated.
8.5	31.7	40.2	Salicylic....	Doubtful....	No description or claim with this sample.
8.0	38.0	46.0	None.....	Present.....	Strawberry tissues only. Adulterated to a slight extent.
8.4	35.4	43.8	Salicylic....	".....	" tissues only. Adulterated.
18.7	36.2	54.9	".....	".....	and foreign tissues "
10.1	41.4	51.5	None.....	".....	Cane sugar crystallized out. Strawberry tissues only. Genuine.
2.9	39.2	42.1	Salicylic....	".....	Strawberry and foreign tissues, probably apple. Adulterated.
6.0	39.9	45.9	None.....	None.....	" " " "
5.0	42.9	47.9	".....	Doubtful....	tissues only. Adulterated.
8.2	37.6	45.8	".....	Present.....	" " " " to a slight extent with glucose.
					tissues only. Adulterated to a slight extent with glucose and dyed.

contents removed. The remainder is very dry, and is evidently not in a normal condition, as offered for

A. MCGILL.

C.—PLUM JAM,

Serial Number.	Departmental Number.	SOLIDS, PER CENT.			Water.	ALCOHOL PRECIPITATE.		POLARIZATION.			
		Insoluble.	Soluble.	Total.		Per Cent.	Character.	Direct.	Invert.	Difference.	
39	20423	No stones,	0.79	68.36	69.15	30.85	2.6	Free.....	+15.0	-9.9	24.9
40	20427	3 "	3.72	58.36	62.08	37.92	9.0	Slightly st'ky	+16.2	-10.4	26.6
41	20428	4 "	5.00	59.78	64.78	35.22	3.5	"	+14.5	+12.1	2.4
42	23289	No "	0.62	71.60	72.22	27.78	41.2	Sticky.....	+55.0	+35.2	19.8
43	23292	1 "	1.80	62.50	64.30	35.70	12.2	"	+33.0	-17.0	16.0
44	23293	6 "	11.40	64.18	75.58	24.42	22.3	"	+39.6	+39.3	9.3
45	23658	4 "	.94	50.30	63.24	36.76	6.5	Slightly st'ky	+23.0	+13.2	9.8
46	23665	9 "	7.80	57.60	65.40	34.60	25.5	Sticky.....	+35.5	+33.0	2.5
47	23667	11 "	15.23	59.32	74.55	25.45	25.4	"	+33.0	+20.5	12.5
48	23680	7 "	7.00	46.06	53.06	46.94	1.5	Free & clean.	-4.0	-1.4	0.4
49	23811	4 "	9.45	53.36	62.81	37.19	7.2	Slightly st'ky	+16.0	+14.1	1.9
50	25048	4 "	4.18	59.80	63.98	36.02	5.6	"	+16.2	+7.2	9.0

D.—PEACH JAM,

51	20439	No stones,	1.19	62.74	63.93	36.07	13.2	Sticky.....	+33.5	+14.3	19.2
52	22194	"	1.24	68.94	70.18	29.82	10.2	"	+27.5	+12.1	15.4
53	23295	"	2.83	68.98	71.81	28.19	52.6	"	+68.0	+58.3	9.7
54	23297	2 "	10.48	64.22	74.70	25.30	22.7	"	+48.0	+28.6	19.4
55	23817	No "	1.23	52.50	53.73	46.27	8.4	"	+16.0	+8.8	7.2
56	25017	"	0.88	62.60	63.48	36.52	11.5	"	+22.0	+7.7	14.3
57	25047	"	3.37	59.10	62.47	37.53	2.7	Free.....	+18.0	-7.0	25.0

MISCELLANEOUS

58	20429		3.27	52.12	55.39	44.61	15.4	Sticky.....	+32.5	+31.7	0.8
59	25018		3.19	58.70	61.89	38.11	15.8	"	+44.0	+35.4	8.6

APRIL, 1904.

Cane.	SUGARS.		Preserva- tives.	Coal Tar Dyes.		Remarks.
	Reduc- ing.	Total.				
16.2	36.0	52.2	None	None	No stones.	Fruit tissues. Genuine.
17.3	25.5	42.8	"	Present	3 "	A little glucose. Genuine but dyed.
1.6	36.2	37.8	Salicylic	None	4 "	per 100 grms. Contains some glucose, and a preservative. Adulterated.
12.9	29.0	41.9	None	Present	No "	Contains much glucose and is dyed. Adulterated.
10.4	32.4	42.8	"	"	1 "	per 100 grms, mouldy. Contains glucose, and is dyed. Adulterated.
6.0	38.7	44.7	Salicylic	"	6 "	per 100 grms., glucose and a preservative. Adulterated.
6.4	30.1	36.5	None ..	"	4 "	per 100 grms, some glucose. Adulterated.
1.6	39.4	41.0	Salicylic ..	None	9 "	" " glucose, and a preservative. Adulterated.
8.1	33.3	41.4	"	Present	11 "	flesh adherent in 5. Glucose and a preservative. Adulterated.
0.3	43.6	43.9	None	None	7 "	flesh free, slight mould. Genuine.
-	43.2	44.4	Salicylic ..	"	4 "	flesh adherent in 2. A little glucose, and a preservative. Adulterated.
5.9	42.4	48.3	None	Present ..	4 "	flesh free. A little glucose and dyed. Doubtful.

APRIL, 1904.

12.5	30.3	42.8	None	None	No stones.	Glucose. Adulterated.
10.0	41.6	51.6	"	"	"	"
6.3	32.1	38.4	"	"	"	"
12.6	23.2	35.8	Benzoic ? ..	"	2 "	"
4.7	37.4	42.1	Salicylic	"	No "	"
9.3	36.6	45.9	None	"	Mouldy.	A little glucose. Adulterated.
16.3	20.0	36.8	"	"	"	"

J. MS, APRIL, 1904.

0.5	38.2	38.7	None	Present	Glucose.	Adulterated.
5.6	30.5	36.1	"	"	"	"

F.—ANALYTICAL data on

Number.	Dry Solids, per cent.	Acidity stated as H ₂ SO ₄ .	SUGARS—PER CENT.			POLARIZATIONS.			ALCOHOL PRECIPITATE.		
			Reducing	Cane.	Total.	Direct.	Invert.	Temp. c.	Per cent.	Character.	
60	20429	66.78	.098	41.1	12.3	53.4	+ 7.6	- 9.5	20	1.25	Clear and free ...
61	20435	60.90	.125	47.2	4.6	52.8	- 4.6	-19.1	21	3.40	Clear, coherent .
62	20421	67.84	.098	49.5	2.1	51.6	+19.8	+17.0	20	20.65	Milky and sticky
63	22105	65.76	.031	20.2	23.6	43.8	+22.0	- 9.6	20	0.65	Clear and free ...
64	23290	58.32	.016	7.4	21.1	28.5	+32.1	+ 2.9	12	22.90	Milky and sticky
65	23291	61.12	.045	18.0	20.6	38.6	+20.0	- 7.9	18	0.35	Clear, coherent ..
66	23806	69.02	.131	6.6	5.9	58.5	- 1.3	- 9.2	21	4.95	" " " "
67	23812	66.06	.029	35.3	1.0	57.3	- 3.8	- 5.0	12	12.10	Clear and sticky.
68	23820	54.76	.054	47.2	2.1	49.3	- 2.2	- 5.0	20	1.50	Clear and free ...
69	23025	63.84	.064	31.8	0.3	32.1	+55.0	+54.6	15	47.90	Milky and sticky
70	23034	61.80	.053	31.6	3.0	34.6	+63.5	+59.4	15	51.95	" " " "
71	24406	75.16	.054	37.5	2.0	39.5	+72.0	+69.3	20	49.15	Clear and sticky.
72	24408	69.60	.069	46.0	10.0	56.0	+ 3.8	-10.0	12	2.30	Clear, coherent ..
73	24925	73.98	.040	35.2	5.0	40.2	+56.0	+49.3	20	65.75	Milky and sticky
74	25021	73.54	.140	51.7	2.3	54.0	+23.0	+19.8	20	37.25	" " " "

Jellies, March 8, 1904.

free Sugar, solids.	Ash.		Preservatives.	Artificial Colouring matter.	Remarks.	Number.
	Per cent.	Alkalin- ity as K ₂ CO ₃ .				
13.38	.440	.317	Salicylic acid.....	None.....	Fruit jelly, containing a preservative.....	20429 60
8.10	.560	.448	None.....	".....	Genuine fruit jelly.....	20430 61
16.24	.330	.297	Salicylic acid.....	".....	Contains glucose, and is preserved with salicylic acid.....	20481 62
21.96	.170	.109	None.....	Doubtful.....	Genuine.....	22195 63
29.82	.840	.343	".....	Much.....	Contains glucose and is dyed.....	23200 64
22.52	.300	.203	".....	None.....	Genuine.....	23291 65
11.52	.530	.385	".....	".....	Genuine, with a trace of glucose.....	23806 66
8.7	.100	.104	".....	".....	Contains a trace of glucose.....	23812 67
5.46	.160	.124	".....	".....	Genuine.....	23820 68
31.74	.770	.238	Present.....	Salicylic acid..	Contains much glucose, is preserved with salicylic acid, and artificially dyed.....	23925 69
27.20	.600	.200	".....	".....	".....	23934 70
35.66	.620	.119	None.....	None.....	Contains much glucose.....	24405 71
13.60	.360	.231	".....	".....	Genuine.....	24408 72
33.78	.420	.110	".....	Much.....	Contains much glucose and is dyed.....	24025 73
20.54	.560	0.336	Salicylic acid.....	Doubtful.....	Contains much glucose and salicylic acid.....	25021 74

MEMORANDUM ON JELLIES.

OTTAWA, March 8, 1904.

The most complete research into the characters of fruit jellies, to which I have access, is contained in Bulletin 66 of the Bureau of Chemistry, at Washington. The data presented in the accompanying table have been obtained by the methods recommended in the bulletin referred to. In addition to the results tabulated, I may state (1) that no reaction for starch was given by any of the fifteen jelly samples examined; (2) that fruit pulp was found in the following samples: 20429, 20430, 23291, 23806, 23820, 24405, 24408; (3) that the ash of all samples gave very distinct reactions for sulphuric acid, and very faint reaction for hydrochloric acid.

The absence of pulp in jelly is not proof that it is not made from fruit, because the fineness of the texture of the jelly-bag strainer, and the care with which it has been used, are factors in the case.

The following samples appear to be genuine, in the sense of being made with cane sugar, having no preservative, and no artificial dye:—Nos. 20430, 22195, 23291, 23820, 24408.

To this list may be added Nos. 23806 and 23812, since the small quantity of glucose found cannot be condemned, and it is claimed by manufacturers that the addition of small amounts of glucose is desirable to prevent crystallization of the sugars; a (U. S. Bulletin 66, p. 78) claim, however, which appears to be without justification in fact.

The following samples are adulterated in the sense that glucose has been largely used in their manufacture, instead of the more expensive cane sugar:—Nos. 20431, 23290, 23925, 23934, 24405, 24925 and 25021. Of these samples, 20431, 23925, 23934 and 25021 contain salicylic acid; and 23290, 23925, 23934 and 24925 contain aniline dyes. No. 20429 is a genuine fruit jelly, but contains salicylic acid. This is quite unnecessary to the preservation of the article, which contains enough sugar for that purpose; and was probably added to the fruit, to give it keeping qualities, until it could be worked up into jelly.

The adulterated samples may be more definitely classified as follows:—

Containing glucose, preservatives and dyes, Nos. 23925, 23934.

Containing glucose and preservatives, Nos. 20431, 25021.

Containing glucose and dyes, Nos. 23290, 24925.

Containing preservative, No. 20429.

Containing glucose, No. 24405.

A. MCGILL.

