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LABORATORY

OF THE

INLAND REVENUE DEPARTMENT

OTTAWA, CANADA

BULLETIN No. 390

FLAVOURING SYRUPS, Etc.

33134-1

NOTE 8.—FEED FLOUR.

Shorts (middlings) are legally defined as feeds having a minimum protein content of 15 per cent, a minimum fat content of 4 per cent, and a maximum fibre content of 8 per cent.

An article frequently sold as special shorts, or choice shorts, and usually commanding a higher price than legal shorts, on account of its lighter colour, and its flour-like appearance, usually fails to meet the above standard; and when sold as shorts may be judged as adulterated under the Act. (See Bulletin No. 350.)

The article referred to is deficient in fat. Of 125 samples reported in Bulletin No. 350, seventy samples contained less than 3 per cent of fat, while shorts is required to contain at least 4 per cent. It is also, as a rule, low in protein. Of the 125 samples just referred to, forty-two samples contained less than 15 per cent of protein. On the other hand, the fibre content of this article is generally much below the limit of 8 per cent allowed in shorts.

The only legal way of marketing this feed is to register it, and to furnish a guarantee as described in the Feeds Act. It should not be offered as shorts or middlings, but as *feed flour*.

LABORATORY

OF THE

INLAND REVENUE DEPARTMENT

OTTAWA, CANADA

BULLETIN No. 390

FLAVOURING SYRUPS, Etc.

December 19, 1917.

J. U. VINCENT, Esq., K.C., B.A., L.Ph., Deputy Minister of Inland Revenue.

Sin.—I would respectfully call your attention to the fact that, during recent years, this department has frequently been asked to look into the matter of fruit syrups and kindred preparations as supplied to the trade for use in soda fountain teverages. We have been prevented $f_{\rm tab}$ ag up the subject earlier by press of other work; but in June of this year to table a plection of 141 samples to be made in the cities and principal towns of the table of was placed in charge of Mr. Geo. II. Brother of this staff, and his report is herewith submitted.

An Order in Council of February, 1911 (published as Circular G. 947) defines fresh fruit juices and sweet fruit juices; but only in very general terms, and without special regard to the employment of these articles for soda fountain use. The beverarest offered at these fountains are not usually claimed to be fruit juices, but are essentially arated water (soda water) flavoured with a fruit juice, which may be actually such, or may be a synthetic preparation imitating the fruit which gives its name to the drink. In the latter case, the satisfactory character of the preparation, ∞ far as flavour is concerned, will depend upon the skill of the manufacturer; and provided that the ingredients are harmless, and that the article is properly described as an imitation, and not as a true fruit juice, there is no ground for complaint. The employment of preservatives and dyes, under the conditions of G. 1111 and G. 1167 is permitted.

These soda fountain syrups are now so largely used that it is desirable to define them more closely than at present is the case under G. 947; and it was mainly with a view to obtaining information regarding them that the work herein reported was undertaken.

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Three of the samples, sold as orange flavouring syrups, contain no sugar; and are not syrups, two being concentrated fruit juices, preserved with salicyclic acid and formaldehyde, and one a synthetic preparation. The remainder are true syrups

		S. F	ource of lavour.			Оуся.			Pre	ervativ	ves.	
Name.	Total samples.	Natural.	Synth+tic.	Doubtful.	None.	Certified.	Uncertified.	None.	Ben. acid.	Sal. acid.	Formal- dehyde.	Alcohol.
(1) Strawberry (2) Pineapple Cherry Lemon. Orange Raspberry Vanilla Chocolate Peach Coffee Ginger, Saraaparilla Rose, Fig 3) Clarot. Ginger, 4) Rainbow. Apricot Banana	27 22 21 18 15 11 7 6 3 1 1 1 1 1 1 1 1 1 1	$\begin{array}{c} 23\\ 21\\ 20\\ 7\\ 6\\ 6\\ 3\\ 1\\ 1\\ 0\\ 0\\ 1\\ 0\\ 0\\ 1\\ 1\\ 0\\ 0\\ 1\\ 1\\ 0\\ 0\\ 1\\ 1\\ 0\\ 0\\ 1\\ 1\\ 0\\ 0\\ 1\\ 1\\ 0\\ 0\\ 1\\ 1\\ 0\\ 0\\ 1\\ 0\\ 0\\ 0\\ 1\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 0\\$	2 1 0 8 6 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 2 2	2 0 1 3 3 4 0 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 1 5 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	9 21 2 4 3 1 7 6 3 1 1 1 0 0 0 0 1 1 1	$ \begin{array}{c} 12 \\ 1 \\ 13 \\ 19 \\ 2 \\ 9 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 1 \\ 10 \\ 1 \end{array} $	6 1 6 4 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	8 10 7 12 5 3 5 6 0 1 0 1 0 0 0 0 0 0 0 5 8	$ \begin{array}{c} 14 \\ 5 \\ 6 \\ 1 \\ 3 \\ 6 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 1 \\ 1 \\ 2 \\ 47 \\ \end{array} $	2 2 7 5 1 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0	$\begin{array}{c} \bullet \\ 2 \\ 2 \\ 1 \\ 1 \\ 1 \\ 2 \\ 1 \\ 1 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0$	$ \begin{array}{c} 1 \\ 1 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0$

Alcohol 19:18 p.c. volume. (1)(2)

(2) 3 35.51 (3) Contains no al ohol.

(4) Mixture cherries and pincapple.

The information furnished herewith will assist your Advisory Board in defining soda fountain syrups; and I would respectfully recommend publication of this report as Bulletin No. 390.

I have the honour to be, sir,

Your obedient servant,

A. McGILL, Chief Analyst.

Dr. A. MCGILL, Chief Analyst.

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DEAR SIR,-I beg leave to submit the following report on the examination of 141 samples of fruit juices or syrups for soda fountains as used throughout the Dominion.

1. Fresh Fruit Juices.--1. "Fresh fruit juices are the clean, unfermented liquid products obtained by the first pressing of fresh, ripe fruit, and correspond in name to the fruits from which they are obtained, and contain not more than two (2) per cent of alcohol by volume."

4. Sweet Fruit Juices, Sweetened Fruit Juices, Fruit Syrups.—1. "Sweet fruit juices, sweetened fruit juices, fruit syrups, are the products obtained by adding sugar (sucrose) to fresh fruit juices, and correspond in name to the fruits from which they are derived."

It is worthy of note that in neither of the above definitions is there any mention of synthetic fruit syrups, i.e., syrups made from synthetically prepared esters and acids imitating those found in the natural fruit, nor of the addition of preservatives and artificial colouring matter.

Since, as I have stated above, there are no specific standards set for fruit syrups intended for fountain use, it is important that deviations from the existing standards be examined to determine whether or not they should be classed as adulterations. Of course syrups containing substances harmful to health will not be considered under this head: there is absolutely no doubt or question as to their adulteration, on other arounds than that they are a menaco to the health of the public.

Synthetic Fruit Syrups.—The use of synthetic, or manufactured preparations for flavouring purposes, such as methyl salicylate for oil of wintergreen, vanillin or commarin for vanilla extract, ethyl butyrate for pineapple, etc., is quite common. They are cheaper and easier to prepare than the natural extracts, hence bring the manufacturer larger profits if they can be sold at approximately the same price charged for extracts. These preparations are inferior to the natural extracts, since the latter owe their delicate flavour to resins and traces of other estors besides the principal one; the former are practically nothing but an alcoholic solution of the principal ester. The result is that, while the preparation may be stronger (in the sense that less is required to produce the flavour), the natural extract is the more pleasing to the taste. To protect the public and yet permit the sale of synthetic preparations, an Order in Council (G. 1276, April 7, 1917) requires the synthetic preparations to be labeled "Imitation" or "Artificial" in letters as large as the rest of the label.

The problem of protection is somewhat different in the present case, since the public purchases fountain flavours only in mixtures. It is, of course, possible and desirable that manufacturers of syrups be required to conform to a regulation similar to that cited above, but this would protect the vendors only. In order to protect the general public, I would recommend a requirement that fountain drinks or preparations flavoured with synthetic flavours be sold over the counter as "mock" strawberry, "mock" pineapple, etc., as the case may be, and that they be so listed or described on the printed menus.

Preservatives.—There is no strong objection to the use of the permitted preservatives (G. 1111, April 15, 1914) in this class of fruit syrups. The syrup is so diluted

when sold to the consumer that none of the listed preservatives would be harmful, even though present in somewhat larger quantities than permitted. It is true there remains the question as to whether any other preservative than the sugar is necessary. Barnard (Chem. Abst. 3 (1909), 2475), claims that fruits preserved in 10 pounds sucrose per gallon of water keep at least seven days, exposed to room temperature during the day and placed in a refrigerator at night; if preserved in 14 pounds sucrose, a syrups results "sufficiently heavy for all practical purposes" which keeps under any ordinary conditions. As no work along these lines has been done in this laboratory up to the present time, we are unable to comment on Barnard's work. As stated above, however, there is no reason why permitted preservatives in reasonable amounts should not be used, provided they are declared by the manufacturer of the label.

Artificial Colouring.—Freshly prepared fruit syrups are bonutifully coloured, due to the natural pigments present in the fruit. Exposure to light causes most of these colours to fade, often to a very unpleasing shade. The fruit itself is not affected, but its appearance renders it unattractive. This would unjustly and seriously affect the business of the dispenser, were it not possible to reproduce nature's colours by the addition of small amounts of harmless dyes. The Department has, therefore, certified in G. 1167, January 18, 1915, seven analino dyes for use in colouring of foods, as follows: Amaranth 107, Poneenn 3R 56, Erythrosin 517, Orange 1-85, Napthol Yellow S4, Light Green ST435, Indigo Carmine 692, and in G. 1278, April 21, 1917, Tartrazine 94. The numbers refer to the classification by Schulz and Julius, as edited by Arthur G. Green.

Among these eight certified colours are found the three primary colours (red, bluo and yellow) as well as the complementaries, orange and green. They are sufficient, therefore, to satisfy every demand, since combining two or more of them practically any colour or shade may be produced. The United States has but five certified colours: Amaranth 107, Poncean 3R 56, Orange 1-85, Tartrazino 94, and Indigo Carmine 692. The Nutional Aniline and Chemical Company, Inc., of New York, has combined these so as to produce fifteen shades and colours besides the original certified five, which they sell under such trade names as "Strawberry Red," "Deep Chocolate," "Yellow Colour, Egg Shade," etc. They have kindly furnished us with samples of all their certified colours for food products and confectionery. Investigation of these samples has demonstrated the fact that manufacturers of fruit syrups have here every colour and shado of the natural fruit, so have no excuse for the use of any but certified colours. As will be shown later, the majority of samples of fruit syrups examined were found coloured with certified dyes, a fact much to the credit of the manufacturers as this is the first examination of this class of fruit syrups, as well as the first investigation of dyes used to colour food products in this laboratory.

The method used for the detection and identification of the dye is outlined in the Journal of the Association of Official Agricultural Chemists (J.A.O.A.C, 2, 161). A piece of white woollen yarn is boiled for about fifteen minutes in the solution to be tested, to which a few drops of hydrochlorie acid have been added. It is then removed, washed well with water and dried. If an aniline dye is present in the solution, the wool will be fast dyed. When dry it is exit into four pieces, which are treated with concentrated hydrochlorie and sulphurie acids, and dilute solutions of sodium and aumonium hydroxides. The colour reactions are noted and by means of a table of these reactions the dyo is identified. This identification can be regarded as only approximate, as the method is rather crude, some of the reactions as given in the table being questionable. For example Amaranth 107, according to the table, gives reactions which we could not duplicato with samples of the pure dye. To show these discrepancies, we will copy the reactions as given in the table and undor them give those we obtained with two separate samples of the pure dye:— ful, here ary. inds ture cose, any tory ove, ould

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	Hydrochloric. Nulphuric.		Sod. Hydrox.	Ammonia.
Given	Slightly darker.	Vlolet to brownish.	Dull brownish.	Little change.
Found	Deep red.	Violet,	Red.	Red.

There is no doubt about the violet colour with sulphuric acid, as the table would lead one to believe; not only did the two samples of pure Amaranth 107 give a very decided violet colour but also five red compound colour (strawberry red, etc.) showing Amaranth to be the base dye used in their construction.

Several syrups contained dyes we were unable to identify; these we classed as "artificial" dyes and considered them uncertified. The subject of dyes and their identification is being further investigated and we hope soon to get out our own table of colour reactions and a more rigorous method than that described above. We are much indebted to Mr. W. H. Watkins, chief chemist of the Buffalo factory of the National Aniline and Chemical Company, Inc., for assistance on this subject.

In order to facilitate comparison, tables have been prepared in where the data on all samples of the same flavour is listed. This also permits more extended remarks and criticism than would be possible were the data given in one large table.

Sample	Analyzad at	Dua	Preservative.		Sucrose	Analyst's Description.	
No.	Analyzed at.		Substance.	p. c.	p. c.		
76602	Halifax	Amaranth 107				Geznine syrup.	
76605		Pouceau 3R 56				Doubtful avrup.	
78015		None	1			Genuine symp.	
5046						Genuine fruit.	
71216		Amaranth 107				Genuine syrup.	
65261	Ottawa	None	Benzoic acid	0.0618	36:27	Genuine fruit.	
65264				0.1135	7 02	Genuine fruit.	
62.269		Amaranth 107		0.2167	26.06	Genuine syrup.	
72591		None	None		29.44	Genuine syrup.	
77515		Artificial	Alcohol	19.18	2.20	Synthetic syrup.	
17534		Ponceau 6R 108.	None		27.15	Genuine syrup.	
77864		Amaranth 107	Benzoic acid	0.0380	45.39	Genuine fruit.	
17.Stiff		None	1	0.1342	24 84	Genuine syrup.	
77965			Salie. acid	Trace.	12:90	Genuine fruit.	
77966		Poneeau SR 56	Benz, acid	0.0858	22.56	Genuine syrup.	
77970		Amaranth 107	Formalin	0.0114	0.00	Synthetic syrup.	
7797 L		None	Benz. acid	Trace.	37.14	Genuine fruit.	
77972			Formalin	0.0024	13.28	Genuine fruit.	
74081		Artificial	Salic. acid	0.0168	42.07	Genuine fruit.	
75328	Winnipeg	Palatine Red 62	Benz. acid	Trace.	33.12	Genuine syrup.	
52696		Amaranth 107		- 11	26.58	Genuine syrup.	
52701		н 107	None		42.38	Genuine syrup.	
68123	Vancouver	Ponceau 3R 56	Benz. acid	0 057	11.31	Genuine syrup.	
75923		Erythiosin 517		0.001	59.20	Doubtful syrup.	
75930		Ponceau 3R 56		0 144	13.38	Genuine fruit.	
75863		Crystal Ponc. 64.		0.0835	35.34	Genuine syrup.	
5867		Palatine Red 62		0.0208	37.40	Genuine fruit.	

STRAWBERRY (27 SAMPLES.)

In the 27 samples of strawberry flavour examined, 2 were found to be synthetic preparations, 2 doubtful, and 23 genuine. 8 samples contained no preservative, 14 small amounts of soda benzoate, 2 salicylic acid, 2 formaldehyde and 1 alcohol. Of the 18 samples which were artificially coloured, but six contained an uncertified dye.

Sample	Analyzad at	Dve	Preservative.		Sucrose	Analyst's Description
No,		Dyc	Substance.	p. c.	p. c.	
76606 76610 78050 71219 7488 65263 65270 72583 77512 77512 77514 77869 77869 77967 75325	Halifax.	None	None. " Salic. acid None Formalin. None. Formalin. Benz. acid Salic. acid Benz. " None. " "	Trace. 0 0171 0 0876 0 0929 35 51 0 0544 0 1548	42 26 18 35 14 19 43 59 50 14 15 34 56 46 57 18 19 86 36 16 17 39	Genuine syrup. """ syrup. """" """" Synth. " Genuine fruit. syrup. fruit. syrup.
68420	Vancouver		Benz. acid	0 045	48.29	11 11
68443				0.000	46.80	
73922	t	11	. 0	0 020	60 85	
75931				0.101	39.37	n fruit.
75864			H H	0.1084	30.81	a ayrup.

There was but one synthetic syrup in the twenty-two samples of pineapple flavour examined. This preparation was the only artificially coloured sample. Ten samples contained no preservative other than sucrose, seven contained benzoate of soda, two salicylic acid, two formaldehyde and one alcohol.

CHERRY (21 samples.

Bample	Analyzed at.	Dye.	Preservativ	e.	Sucrose	Analyst's Description.
No.			Substance.	p. c.	p. c.	
78047 71220 7487 72599 77539 77537 77557 77564 77964 74085 70327 79508 52731 70508 52731 70508 52731 70508 52731 70508 52731 70508 52731 70508 52731 70508 75928	Halifax Ottawa " " " " " " " " " " " " " " " " "	Porceau 3R 56 Amaranth 107 """ Palatine Red 62 Ponceau 3R 56 Napth. Yel. S 4 Palatine Red 62 Artificial Artificial Cryst. Ponceau 64 Aunaranth 107 Ponc. 3R 56 Ponc. 3R 56	None	0 046 0 006 0 004 0 016 0 018 0 019 0 012 0 023 Trace, 0 054 0 094 0 076	$\begin{array}{c} & 49\cdot 26 \\ 11\cdot 16 \\ 47\cdot 79 \\ 22\cdot 15 \\ 17\cdot 95 \\ 1\cdot 40 \\ 15\cdot 22 \\ 4\cdot 75 \\ 39\cdot 66 \\ 32\cdot 91 \\ 22\cdot 49 \\ 66\cdot 30 \\ 51\cdot 70 \\ 6\cdot 54 \\ 16\cdot 69 \\ 46\cdot 36 \\ 3\cdot 47 \\ \end{array}$	Gen syrup. Doubt. syrup. Gen. " " " " " fruit. " fruit. " fruit. " " (mint). " " " " " " " " " " " " " " " " " " "
75869 75871	0 0	None Amaranth 107	None. Benz. acid	0.111	1·28 8·36	11 11 11 11

* Benzoate declared.

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PINEAPPLE (22 samples.)

Of the twenty-one samples examined, one was doubtful, the remaining twenty genuine. All were found to be coloured but two, thirteen with certified dyes and six with others. Seven contained no other preservative than sucrose, six sodium benzoate, seven salieylic acid and one formaldehyde.

Six samples (Nos. 77513, 77533, 77867, 77964, 75928 and 75871) were labeled and sold as "Maraschino cherries." Steps should be taken to require manufacturers of this class of goods to label their product in a less deceiving manner, since these were not maraschino cherries. The following extract from Food Inspection Decisions, United States Department of Agriculture, F.I.D. 139 (Chem. 'Abst. 6, (1912), 1473) first defines the term, then places regulations on the labeling of products similar to the above: "Maraschino is a liqueur or cordial prepared by fermentation and distillation from a small wild Dalmatian cherry. Imitations of maraschino should be labelled "imitation." Cherries of other varieties preserved in maraschino liqueur may be called "cherries in maraschino," or if preserved in a syrup flavoured with maraschino alone, may be called "cherries, maraschino flavour" or "maraschino flavoured cherries." Sample No. 75869, put out by the Liquid Carbonic Company of Chicago, cenforms to the above: it is labeled "cherries, imitation maraschino flavour."

Sample No.	Analmood at	Thus	Preservativ	0	Sucrose	Analmata Description
	Analysed at.	Dye.	Substance.	p. c.	p. c.	Analyst a Description.
76601	Halifax	Tartrazine 94.	None			Doubtful aveun
78042						Synthetic syrup.
-8048		None.				Genuine avrup
71215		L'artrazine 94.				Synthetic ayrup
71217		Orange 1 85.	Salic acid	Trace		
71221		Tartrazine 94	None			
71999		Artificial				
5652	Ottawa	Napth Vel S 4	Salic acid	0.023	54-54	Genuine avrun
7446		None		0.031	39.49	Genuine syrup.
65965			None	0.001	63 92	
79596		Auramine 495	Formalin	0.099	39.69	
72600			None	00000	57.36	Synthetic symp
77851		Tartrazine 91	Salic acid*	0.034	2.00	Genuine armin
74081		Quin Vel 667	None	0.001	44.19	Genune syruy.
59693	Winniper	None			46.19	Doubtful annun
68419	Vancouver	Nauth Val SA			57.49	Doubtin syrup.
68119	rancouver		Rong and	0.009	55.76	Sumthatin aumun
7586*			None	0 000	47.07	by neaetic syrup.
i de una			roue.		10.14	11 11

LEMON (18 samples.)

* Benzoate declared.

Genuine flavours, 7; synthetic, 8; doubtful, 3. The dyes show a better proportion, only four samples being coloured with uncertified dyes. Twelve samples were found to be pre-erved with sucrose alone, four with salicylic acid and one each with sodium benzoate and formaldehyde. The explanation for the large percentage of synthetic preparations of this flavour is probably found in the fact that of all flavours, lemon and orange are the easiest and probably the most commonly reproduced. It is well known that the so-called "circus lemonade" is nothing but a water solution of citric or tartarie acid, sweetened and coloured.

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ORANGE	(15	samp	les)).	
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Senulo		•	Preservative.		Sucrose.	Analyst's description
No.	Analyzed at	Dye.	Substance.	p.c.	p.c.	Anarysee description.
76608 78041 71218 5653 7485 65260 77516 75868 79506 52699 68417 75926	Halifax.	None Artificial Orange 1 85 Meth. Orange Orange 1 85 Orange G 14 Orange G 14 Orange IV 88 Orange IV 88 Orange II 86 Croceine Or. 13 Orange 11 86 Orange 11 86 Orange 11 86	None. Salie-acid	0.023 0.014 0.015 0.057 0.020 0.013 Trace. " 	$\begin{array}{c} 33.06\\ 52.72\\ 59.65\\ 00.00\\ 2.61\\ 30.30\\ 20.82\\ 59.40\\ 60.24\\ 35.488\end{array}$	Gen. syrup. Comp syrup. " Genuine syrup. " Syn. syrup. Doubt. syrup. Syn. syrup.

Six genuine, three compound, three synthetic and three doubtful. Ten samples were found coloured with forbidden dyes. This must be due to ignorance since no samples were more brilliant in colour than those dyed with orange 185. Five samples contained no added preservative (one, No. 75326, not even success), three salicylic acid; five benzoic acid; two formaldehyde.

RASPBERRY (11 samples.)

Sample			Preservative.		Sucrose.	Analyst's description
No.	Analyzed at	Dye.	Substance.	p.c.	p.c.	Analyst's description
78049 71223 72594 77535 77969 74082 75330 52702 63421 75866 75924	Halifax. Ottawa Winnipeg. Vancouver	Amaranth 107 None." Amaranth 107 "" Palatine Red 62 Amaranth 107 Ponceau 3R 56	Benz. acid None Benz. acid Salic, acid None Benz. acid None Benz. acid "	0 032 0 089 0 266 0 017 Trace. 0 181 0 059 0 019	$\begin{array}{c} 11.36\\ 1.23\\ 37.14\\ 55.76\\ 21.57\\ 38.59\\ 1.30\\ 13.73\\ 48.46\end{array}$	Doubt. syrup. Gen. syrup. Gen. fruit. Gen. syrup. " Doubt. syrup. (Gen. syrup. Gen. fruit. Gen. syrup.

Out of eleven samples examined, seven were found to be genuine and four doubtful. Only one sample was coloured with an uncertified dye. Three samples contained no preservative, six benzoic acid, one salicylic acid and one formaldehyde.

VANILLA	(7	samp	les).
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11

Sample Analyzed at.		Dye.	Preservativ	e.	Sucrose.	Ana ¹ yst's descript	
			Substance. p. c.		p. c.		
76607	Halifax	None	None			Gen. syrup.	
78044	91		Formalin	0.018	36.59	Svn	
5655	()		. Salic. acid	0.011	37 08	Ger.	
74083		н	. None		57.49	91 EF	
75334	Winnipeg	/11			56·82		
-52698					20.28		

There was but one synthetic preparation (flavoured with coumarin) in the seven samples examined. Aniline dyes were found in none, though No. 75334 was coloured with caramel. Two contained small amounts of foreign preservatives, salieylic acid and formaldehyde.

CHOCOLATE (6 samples).

Sample	Analyzed at.	Dye.	Proservative.	Sucrose.	Analyst's description.	
			Substance. p. c.	p. c.		
76603 72592 72595 72595 72598 79511 52700	Halifax Ottawa Winnipeg	None	None	48 66 29 82 43 98 61 60 44 40	(fen. syrup,	

No comment is necessary on the above; it speaks for itself.

PEACH (3 samples).

Sample No	Analyzed at.	Dye.	Preservative		Sucrose.	Analyst's description.	
			Substance.	p. c.	p. c.		
65262 77871 75870	Ottawa Vancouver	None	Formalin Benz. acid	0.050 0.059 Trace.	44 · 17 17-31 31 · 58	Gen. syrup.	

r doubtontained

All genuine, none dyed. Two were preserved with sodium benzoate and one with formaldehyde.

samples ince no samples salicylic

cription.

iption.

MISCELLANEOUS (11 samples).

Sample.				Preserva	tive.	Sucrose.	Analyst's
No. Analyzed at.	r lavour.	Dye.	Substance.	р. с.	р. с .	description.	
76604	Halifax	Coffee	None	None, Salic acid	Trace.		Gen. syrup.
71224	Ottawa	Sarsaparil Rose.	Aniline Yel. 7	None Formalin	0.018	45.88	Syn. " Doubt. "
77870 77872	H	Fig Claret	None	Benz. acid Salic	0·170 0·019	43.08 51.40	Gen. fruit. Doubt. syrup.
77963 75865	Vaucouver	Grape Rainbow	Indigotine P. 693 Erythrosin 517	Benz	0.075	00.00	Syn. " Gen. fruit.
75929 68422	0 0	Apricot Banana	None Ponceau 3R 56	""""""""""""""""""""""""""""""""""""""	0.082 0.110 Trace	29.88 42.60 56.96	Syn. syrup.

Six genuine, four synthetic and two doubtful. Three samples were coloured with uncertified dyes. Six were found to contain sodium benzoate, two salicylic acid, and one formaldehyde.

In the collection were found three extracts (7451, lemon; 7495, vanilla; 7450, pineapple) and a soft drink (No. 75331, loganberry) collected by mistake.

Summary.—In the total number of syrups examined (141), one hundred and four were found to be genuine, twenty-two synthetic and fifteen doubtful. There were only thirty-one samples coloured with uncertified dyes. Fifty-eight samples contained no added preservative, forty-seven benzoic acid or benzoates; twenty-tw salicylic acid; twelve formaldehyde and two alcohol. Such low percentage of syntiletic preparations and syrups coloured with uncertified dyes in this representative collection, indicates that it will be a comparatively easy matter to enforce the standards as recommended in the first part of this report.

GEO. H. BROTHER,

Assistant Analyst.

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BUILETIN No. 390-FRUIT FLAVOURS.

Inspector's Report. (Is	Inspector's Report. (1s not an expression of opinion.)			
of Manufacturer given by the or.	Furnisher.	or.		
Name and Address or Furnisher as Vend	Manufacturer.	J. WAUGH, INSPECT		
Cost.	Quantity. Cents.	COTIA-R		
for the second s	Name and Address of Vendor.			
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Nature				
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	Patrick	;	Tally-H		Brown	Kinley	W. A.	=	G. P. B	G. Met	
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DISTRICT OF NEW BRUNSWICK-JOHN C. FERGUSON. INSPECTOR.

		ý	ry.		nd Lime.	y. H-1% Benz.	6. 0
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	35 J. H. Smith, Toronto	65 J. J. McLaughlin, Toronto 25 Vendor	80 Vendor	00 J. H. Smith, Toronto	75 Logan, Johnson Co., Boston, .	50 Murray Co., Boston, Mass	.00 J. J. McLaughlin, Ltd ,
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	78041 William Hawkes & Son, St. 3	John, N.B. 18042 H. J. Dick, St. John, N.B 78043 W. H. Bell, St. John, N.B 38141 Ross Drug Co. 144 St. John 3	78045 M. V. Paddock. St. John, N.B., 3 74045 V. Paddock. St. John, N.B., 3	78047 Arthur J. Ryan, Fredericton, 3	78048 L. W. Vanvart, Fredericton, N. B. 3	78049 L. C. Heustis, Suesex, N.B 3	78050 G. C. Lyall, N.B., Moncton 3
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	00 T. J. Couches & Co., Toronto 00 The Chattams' Candy Co., Toronto.	50 Vendor
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	Constantin Janellas, St. Jerome. J. A. Duclos, St. Jérôme	A. Desjardins, St. Jérôme
	505	565
-	6 Drauge	6 Cream Soda
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" 20 ". June 28 Lemon Exti		DISTRICT OF QUEREC PROVINCE-N. CADIEUX, TEMPORARY INSPECTOR.		act. 5653 Constantin Janellas, St. Jerome. 3 pts. 1.00 T. J. Couches & Co., Toronto. 5653 J. A. Duclos, St. Jerome. 3 ", 1.00 The Chattams' Candy Co.,
1 une 2% [0	-		-	smon Extract
	R7 =			June 26 Dr

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-FRUIT
390-
No.
BULLETIN

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Inspector's Report. (Is not all expression of opinion.)					
s of Manufacturer s given by the dor.	Furnisher.				
Name and Address or Furnisher a	Manufacturer.				
Cost.	Quantity. Cents.				
	Name and Address of Vendor.				
.9'qmg2 lo .0X					
	Nature of Sample.				
.noite	Date of Colle				

DISTRICT OF QUEBEC CITY-F. X. W. E. BELAND, INSPECTOR.

 [15] Peter Demetre, 74 St. Jean, 3 bots. [1,00] Imperial Ext. Co., Torouto [217] Joa. Bretton, 75 St. Paul, Quebec. [218] T. Dussanik, 45 St. Joseph, 3 " 1,50] A. B. Dupuis, Toronto [219] Marathon Ice Crean, 3645 St. 3 " 1,50] A. B. Dupuis, Toronto [210] Marathon Ice Crean, 3645 St. 3 " 70] Imperial Ext. Co., Torouto [210] Marathon Ice Crean, 3645 St. 3 " 70] Imperial Ext. Co., Torouto [210] Marathon Ice Crean, 3645 St. 3 " 70] Imperial Ext. Co., Torouto [211] A. C. Thivierge, 408 St. Valier, 3 " 1,05] [222] R. Co., Torouto [223] Mirethon I. Scheam, 404 St. Joseph, 3 " 1,05] [224] [224] [224] [225] Quebec. [226] [226] [227] [228] [229] [229] [229] [220] [220]	Lemon.	Strawberry. Lemon. Orange.	Pineapple.	Lemonade.	Lemon.	Citronelle.	
 [15] Peter Demetre, 74 St. Jean, 3 bota. [1,00] Imperial Ext. Co., Torouto [217] Joa. Bretton, 75 St. Paul, Quebec. 3 [218] T. Dussanik, 45 St. Joseph, 3 [160] Marathon Ice. Crean., 3643 St. 3 [100] Laren's, Ltdl, Toronto 		Rose & Laflanme.	Unknown.	Mfr.			
 Peter Demetre, 74 St. Jean, 3 bota. Peter Dusetre, 74 St. Jean, 3 bota. 217 Jos. Breton, 75 St. Paul, Quebec. 218 T. Dussault, 45 St. Joseph, 3 " 219 Marathon Icv Crean, 364 St. 3 " 220 Marathon Icv Crean, 404 St. Joseph, 3 " 221 A. C. Thivierge, 408 St. Valier, 3 " 222 Baston I ve Cream, 404 St. Joseph, 3 " 223 Quebec. 224 "" 	I. (0) Imperial Ext. Co., Toronto	1.00 1.50 A. B. Dupuis, Torouto	70 Imperial Ext. Co., Toronto	3.00 Laren's, Ltd., Toronto	1.05 Impenai Ext. Co., Toronto	1.05	
	ns D. der Dumatres 74 St. Jean, 3 bots.	217 Josepheron, 25 St. Paul, Quebec.	Onebec. Onebec. 219 Marathon Ice Crean, 3645 St. 3	220 Joseph, Quebec. 220 A. C. Thivierge, 408 St. Valier, 3	Quebec. 222 Boston I ve Cream, 404 St. Joseph, 3 "	223 Variation 1 3 1	
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sence de fruits	17.	8 8 8	8 8	50	8	8.08	

DISTRICT OF THREE RIVERS-DR. V. P. LAVALLEE, INSPECTOR.

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DISTRICT OF MONTREAL-J. J. COSTIGAN, INSPECTOR.

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DISTRICT OF OTTAWA-J. A. RICKEY, INSPECTOR.

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BULLETIN No. 390-FRUIT FLAVOURS.

Inspector's Report. (Is	not an expression of opinion).
f Manufacturer given by the or.	Furnisher.
Name and Address of or Furuisher as to Vendo	Manufacturer.
Cost.	Quantity. Centa,
Name and Address of	Vendor.
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	ure of Sample
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DISTRICT OF KINGSTON -JAMES HOGAN, INSPECTOR.

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DISTRICT OF HAMILTON-H. J. DAGER, ACTING INSPECTOR.

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DISTRICT OF WINDSOR-JOHN TALBOT, INSPECTOR.

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65259 Abdo & Knoury, St. Thomas 3 jar	5260 R. H. Beattie, St. Thomas 3 "	65261 G. W. Kent, Londen 3	65262[Olympia Candy Co., London 3 "	65263 J. Fawkes & Son, London 3 "	65264 H. E. Boomer, London	65265 J. M. Chivas, London 3 "	65269 J. Nunn, Strathroy	65270 Jaa. Woods, Strathroy 3 "	
65259 Abdo & Knoury, St. Thomas 3 jar	(5260 R. H. Beattie, St. Thomas 3 "	65261 G. W. Kent, Londen	65262 Olympia Candy Co., London 3 "	. 65263]J. Fawkes & Son, London 3 "	65264 H. K. Boomer, London] (5265]J. M. Chivas, London 3 "	65269 J. Nunn, Strathroy	65270 Jaa. Woods, Strathroy 3 "	
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lavour 65269 Abdo & Knoury, St. Thomas 3 jar	" (15250 R. H. Beattie, St. Thomas 3 "	"	" [65262]Olympia Candy Co., London 3 "	"	" 65264 [H. F. Boomer, London	" [65265 J. M. Chivas, London [3 "	"	" [65270]Jaa. Woods, Strathroy	
ruit Flavour 65259 Abdo & Knoury, St. Thomas 3 jar	" " " [57260 R. H. Beattie, St. Thomas 3 "	" " 65261 G. W. Kent, Londen	" " " 5262[Olympia Candy Co., London 3 "	" " " 65263]J. Fawkes & Son, London 3 "	" " [62264]H. F. Boomer, London	" " [65265]J. M. Chivas, London 3 "	" " [65269]J. Nunn, Strathroy	" " [65270 Jas. Woods, Strathroy	
19 Fruit Flavour	19 " " " [17260 R. H. Beattie, St. Thomas 3 "	21 65261 G. W. Kent, London	21 " " 65262[Olympia Candy Co., London 3 "	21] " "	22	22 " " [5265]J. M. Chivas, London 3 "	19]	19 " " " 65270 Jas. Woods, Strathroy	

Inspector's Report. (Is	not an expression of opinion.)				Pineapple. Orange. Cherry. Strawberry. Kaspberry. Leganberry. Vrild Cherry. Chocolate
Manufacturer iven by the	Fumisher.	PECTOR.		R	Ok.
Name and Address of or Furnisher as g Vendor	Manufacturer.	HOS. ARMSTRONG, INS	.J. McLaughlin, Toronto.	COSGROVE, INSPECTO	lacNab&Roberts, Winnipeg """"""""""""""""""""""""""""""""""""
Crist.	Quantity. Gente.	0NTARIO-T	. 3 pts. 1.05 J	TOBA-J. B.	ge 3 pts. 90 A ge 3 n 1.15 90 A se 3 n 1.15 90 A se 3 n 1.05 C 30 A se 3 n 1.05 C 30 A A se 3 n 1.05 C A
	Name and Address of Vendor.	DESTRICT OF NORTHERN	W. R. Lowry, Cobalt	DISTRICT OF MAN	Arington Lunch, 885 Forta Ave., Winniper, 1957 Forta Ave., Winniper, 1958 Forta Ave., Winniper, 2008 Forta Ave., Winniper, 200 Fortage Ave Winniper, 200 Fortage Ave Winniper, 100 Fortage Ave Winniper, 100 Fortage Ave Minniper, 891 We Winniper, 100 Fortage W. H. Wiggins, Holland Geo, Blackwell, Holland Mack Confectionery, 891 We munder Ave., Holland DISTRICT OF ALBE
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	Nature of Sample.		t Fruit Flavour		Fruit Flavour
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DISTRICT OF ALBERTA -A. V. K. MAKALEY, INSPECTOR.

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DISTRICT OF VANCOUVER-G. G. ARMYTAGE, INSPECTOR.

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BULLETIN No. 390-FRUIT FLAVOURS.

Inspector's Report.	(Is not an expression of optimical)
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Name and Address or Furnisher, aw Vende	Manufactures.
Cost.	Quality.
	Name and Address of Vendor.
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DISTRICT OF VICTORIA-6. 6. ARMYTAGE, ACTING INSPECTOR.

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