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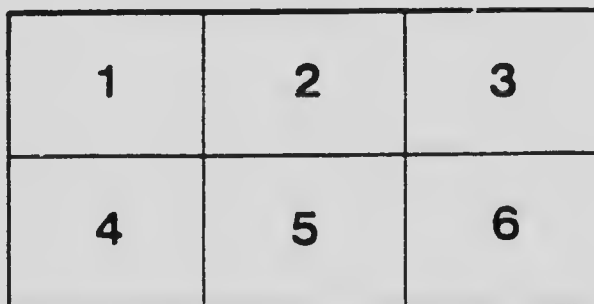
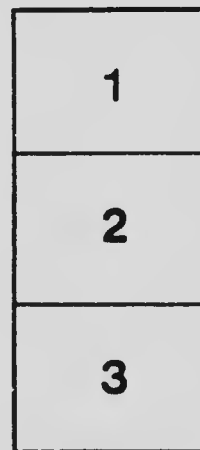
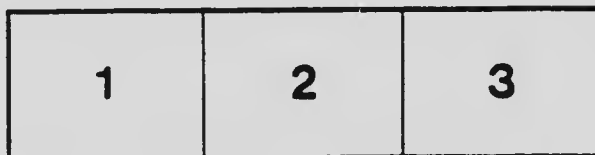
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O. H. M. S.

*W. J. Gerald*  
Deputy Minister.

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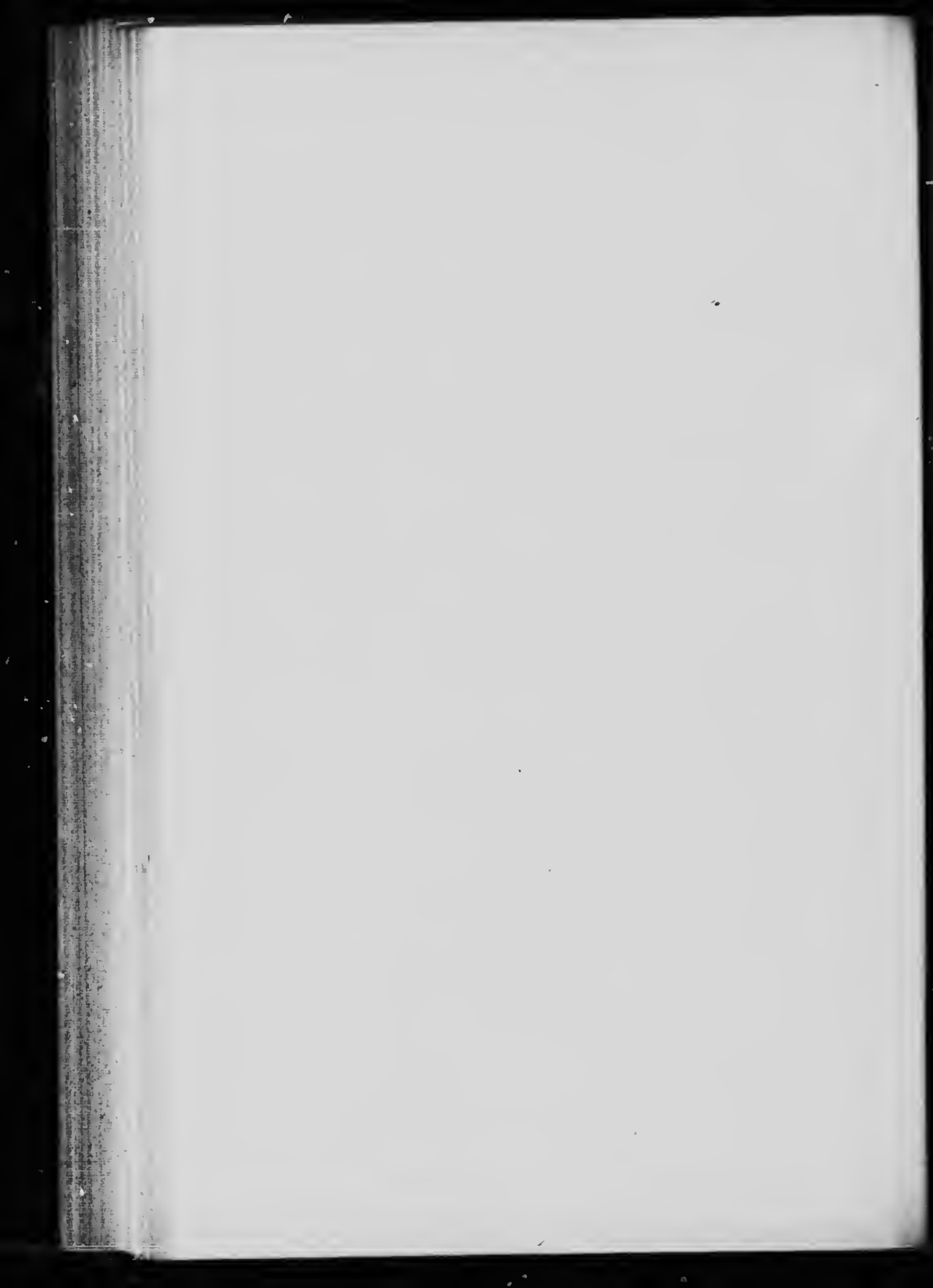
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LABORATORY  
OF THE  
INLAND REVENUE DEPARTMENT  
OTTAWA, CANADA.

—  
BULLETIN No. 189  
—

CREAM.

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LABORATORY  
OF THE  
INLAND REVENUE DEPARTMENT

OTTAWA, CANADA.

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BULLETIN No. 189.

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CREAM

OTTAWA, September, 23, 1909.

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

SIR,—I beg to hand you a report of work done upon 65 samples of so called Cream purchased by our inspectors in 13 out of the 15 inspectoral districts of Canada.

This is the first time that a systematic collection of cream has been made, under the Adulteration Act. A collection of 367 milk samples, made in April 1906. (Bulletin 121) includes 29 samples of cream, whose fat content ranged from 12·63 to 33·51 per cent with an average of 22·76 per cent.

In view of the desirability of fixing standards for milk and allied food substances, under Sec. 26 of the Adulteration Act, it is important to discover what the public expects to get, when it buys cream. The work now reported shows that the public is offered, and accepts as cream an article varying in butter fat (the characteristic and the valuable component of cream) from above 42 to 11·10 per cent. Whether or not the public is satisfied with this condition of things is another matter.

In order that the great variations of value in market cream may be clearly apprehended, I here arrange the 64 samples analysed of the present collection, in serial order of butter fat content.

No. 36784	42.06	above 40%	No. 35971	23.72	above 20%
41513	41.27	"	41158	23.61	"
35972	40.12	"	41721	23.38	"
			35583	22.92	"
No. 41157	39.90	above 30%	31300	22.61	"
36786	39.71	"	31342	22.40	"
40277	39.57	"	40279	22.29	"
36783	36.00	"	40278	22.22	"
36785	31.21	"	37694	21.77	"
41155	30.18	"	41514	21.62	"
974	30.00	"	41723	21.61	"
			38566	21.22	"
No. 41722	29.75	above 25%	41264	21.18	"
41511	29.72	"	37693	20.40	"
41512	29.27	"	41725	20.07	"
36772	28.93	"			
36522	28.65	"	No. 41268	19.38	above 15%
41339	28.57	"	41721	19.01	"
36524	28.05	"	41267	18.54	"
37695	27.89	"	38559	18.31	"
971	27.23	"	35587	18.13	"
41282	26.98	"	35586	17.60	"
37692	26.91	"	41343	17.36	"
36523	26.74	"	39525	17.00	"
40276	26.50	"	970	16.91	"
41515	26.42	"	35585	16.24	"
39521	25.98	"	35974	16.06	"
41265	25.76	"	35584	16.06	"
36773	25.49	"	38557	15.92	"
			38558	15.83	"
No. 41156	24.93	above 20%	40289	15.37	"
41159	24.73	"	38566	11.77	above 10%
35970	24.46	"	41341	11.42	"
36782	24.06	"	35973	11.10	"

In Bulletin 121, the late Chief Analyst suggests standards for cream as follows:—  
Whipping cream, not less than 25 per cent. butter fat.  
Table " " " 17.5 " " "

My impression is that it would be unwise to attempt the establishment of standards for different grades of cream. The time may come when legal standards of quality recognizing different grades within the species, may be justified; but, for the present, I think that the requirements of the Act, are met by the establishment of specific identity. If an article sold as wine, or coffee, or vinegar, &c., corresponds to the definitions respectively of wine, coffee and vinegar, the subordinate questions of value, from the point of view of the connoisseur, must be left to be dealt with by the purchaser himself. When the public asks for cream, it must get cream. The particular grade of cream is a matter to be settled between the buyer and seller. This leaves us face to face with the question, what is cream?

Some may say 'cream' begins where 'milk' ends. An extra rich milk may be regarded as a poor cream. This would seem to be the position taken by some vendors, because, although a milk containing 11 per cent of butter fat is quite exceptional, it is not unknown. (See Nos. 24, 65, 515, 517, 28644, &c., of Bull. 121). Were such a contention to be seriously considered, it would still be necessary to fix a minimum for fat in the article. The present report shows that only 3 samples out of 64 sold as cream, contain less than 15 per cent of fat. Twenty-nine samples reported in Bulletin 121, show an average of 22.76 per cent fat, with only one sample below 16 per cent. On the other hand, 75 per cent of these two collections (totalling 93 samples), show more than 20 per cent of butter fat in the article sold as cream.

The standard for cream established by the United States Department of Agriculture, (Circular 19, of June 26, 1906), is 18 per cent fat. Several States of the American Union have established independent standards, and these range from 15 to 30 per cent for cream. Great Britain has no legal standard for cream; but the following passage from a recent report to the Local Government Board (Food Report, No. 10, 1909) gives an idea of what is considered to be cream in England.



'None of the creameries which I visited (with two exceptions in the north of England to which reference will be made later) supplied cream containing less than 40 per cent of butter fat. In most cases the cream contained well above this quantity; about 50 per cent being a usual amount. Samples from two creameries showed on analysis as much as 59 per cent of fat. In general a somewhat higher fat content was observed in cream supplied by the firms visited in the south of England than in the north.'

It is my belief that no injustice will be done to the dealer, and that a much needed protection will be afforded to the consumer, if the following definition of cream be made legal:—

1. Cream is that portion of milk, rich in milk fat, which rises to the surface of milk on standing, or is separated from it by centrifugal force; is fresh and clean, and contains not less than eighteen (18) per cent of milk fat.

2. When guaranteed to contain a higher percentage of milk fat than eighteen (18) per cent, it must conform to such guarantee.

3. Cream must be entirely free from gelatine, succrate of lime, gums, or other substances added with a view to give density, consistency or apparent thickness to the article.

4. Cream must contain no preservatives of any kind; nor any colouring matter, other than is natural to milk.

5. Evaporated cream, clotted cream, condensed cream, or any other preparation purporting to be a cream, (except ice cream), must conform to the definition of cream as given above, and must contain at least twenty-five (25) per cent of milk fat.

It is pretty well known that a number of articles called *Cream thickeners* are on the market. These are intended to be added to cream for the purpose of giving it an appearance of greater density and richness than it really possesses. Gelatine is a constituent of most of them; but calcium succrate (Succrate of lime) gum tragacanth and other substances are often present. Some of the Cream samples of this collection were examined for 'thickeners', and evidence of gelatine was quite definitely found in 4 samples; while reactions sufficiently clear to justify a declaration of *trace of gelatine* were obtained with 9 other samples.

Evidently the cream producers of Canada are not above suspicion of employing these entirely dishonourable methods of giving a fraudulent appearance of richness to the article. This mode of fraud is particularly harmful in cases where a Dairy Company, counts among its patrons, a few who are guilty of the use of thickeners. It may be the aim of such company to supply honest cream; but, by intermixing ignorantly, a few gallons of the sophisticated article, a whole day's output may be contaminated. Of course, in such case, the company must be held responsible, should adulteration be detected. It is quite true that the guilty patron of such a company could not possibly reap any advantage to himself, provided that his cream was sold on its fat content; but agents interested in the sale of these 'cream thickeners', have been known to so misrepresent them, as to lead the purchaser to believe that his cream was actually improved by their use. The only safeguard which a Dairy Company can have, is the periodical testing of its cream for these thickeners.

On our next collection of cream, I shall see that a systematic examination for cream thickeners is made.

I beg to recommend the publication of this report as Bulletin No. 189.

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

A. MCGILL,  
*Chief Analyst.*

## BULLETIN No. 189—CREAM.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.		Name and Address of Manufacturer or Firm, as given by the Vendor.	Inspector's Report. (Is not an expression of opinion.)	RESULTS OF ANALYSIS.				Remarks and Opinion of the Chief Analyst.	
				Quantity.	Price.			Total Solids.	Fat per cent.	Solids not Fat per cent.	Fat per cent.		No. of Samples.
1906.													
Aug. 12.....	Cream.....	41721	Acadia Dairy Co., Wolfville, N. S.	1 qt.....	0 25	W. W. Furo, Waer-ville, N.S.	.....	26 61	19 01	7 60	41721	See prefatory letter.	
" 17.....	".....	41722	Scotia Pure-Milk Co., Halifax, N.S.	Half-1½ pts..	0 30	Unknown	.....	36 67	29 75	6 92	41722		
" 18.....	".....	41723	I. S. Higgins, Halifax, N.S.	".....	0 25	Wm. Moore, Shubenacadie, N.S.	.....	28 85	21 61	7 24	41723		
" 18.....	".....	41724	A. D. Johnson, Halifax, N.S.	".....	0 23 1/2	G. Brenton, Stewiacke, N.S.	.....	30 79	23 38	7 41	41724		
" 18.....	".....	41725	" " " " " " " "	".....	0 23	A. G. Horne, Enfield, N.S.	.....	27 52	20 07	7 45	41725		
July 23.....	Cream.....	38556	Mrs. Douglas Smith, Rus-tico Road.	1½ pts..	0 12	Vendor.....	.....	20 18	11 77	8 41	38556	See prefatory letter.	
" 23.....	".....	38557	Mrs. J. Mallett, Royalty Charlottetown.	".....	0 15	".....	.....	25 08	15 42	7 13	38557		
" 23.....	".....	38558	W. S. Bowman, Royalty Charlottetown.	".....	0 15	".....	.....	23 24	15 83	7 41	38558		
" 23.....	".....	38559	Mrs. J. P. Wood, Alexandria.	".....	0 15	".....	.....	25 82	18 31	7 51	38559		
" 23.....	".....	38560	Mrs. E. K. Scott, North River.	".....	0 15	".....	.....	28 77	21 22	7 55	38560		

## DISTRICT OF NOVA SCOTIA—R. J. WAUGH, INSPECTOR.

## DISTRICT OF PRINCE EDWARD ISLAND—THEO. MOORE, INSPECTOR.

DISTRICT OF NEW BRUNSWICK—J. C. FERGUSON, INSPECTOR.

July 25.....	Cream.....	36521 Maritime Dairy Co., St. John, N.B.	1 qt....	0 30	Maritime Dairy Co., Sussex, N.B.	32 68	25 98	6 70	30321
" 26.....	"	36522 St. John Creamery Co., St. John, N.B.	"	0 30	Several Farmers	35 84	28 65	7 19	30322
Aug. 7.....	"	36523 C. J. Bodkin, Fredericton, N.B.	"	0 30	"	33 57	26 74	6 83	30323
" 17.....	"	36524 Maritime Dairy Co., Ltd., Sussex, N.B.	"	0 25	"	34 85	28 05	6 80	30324
" 18.....	"	36525 G. O. Stratton, Moncton, N.B.	"	0 30	Moncton Pasteurized Milk Co., Sunny Brae, N.B.	24 46	17 00	7 46	30325

DISTRICT OF QUEBEC—E. BELAND, INSPECTOR.

July 16.....	Cream.....	36782 Joseph Mailhot, Beauport.	1½ pqs.	0 20	Vendor	30 80	24 06	6 74	36782
" 18.....	"	36783 Mad. Grenier	"	0 20	"	42 05	36 00	6 05	36783
" 16.....	"	36784 Joseph Parent	"	0 20	"	49 29	42 66	6 54	36784
" 16.....	"	36785 Francis Bedard	"	0 20	"	37 57	31 21	6 26	36785
" 16.....	"	36786 Veuve Compans	"	0 20	"	45 84	39 71	6 13	36786

DISTRICT OF ST. HYACINTHE—J. C. ROULEAU, INSPECTOR.

July 20.....	Cream.....	970 W. J. Gobeil, Farnham.	1 qt.	0 20	Vendor	24 43	16 91	7 52	970
" 23.....	"	971 A. Mathieu, Victoriaville.	"	0 30	"	33 83	27 23	6 60	971
" 21.....	"	972 H. Peltier, Rapid Plat, St. Hyacinthe.	"	0 25	"	36 07	28 93	7 14	972
" 21.....	"	973 E. Lemieux, Ravy St. Francois, St. Hyacinthe.	"	0 25	"	33 01	25 49	7 52	973
" 21.....	"	974 Fra. Belanger, Rapid Plat, St. Hyacinthe.	"	0 25	"	36 58	30 00	6 58	974

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

July 21.....	Cream.....	40276 Standard Dairy Co., Montreal.	1 qt.	0 30	E. L. Magne, Warden, P.Q.	33 54	26 50	7 04	40276
" 23.....	"	40277 G. Jubin, 90 Roy St., Montreal.	"	0 40	Unknown	42 80	36 57	6 23	40277
" 23.....	"	40278 Rome, 91 Lagaudiers St. E., Montreal.	"	0 30	Montreal Dairy Co.	29 20	22 22	6 98	40278
" 23.....	"	40279 P. Brunet, 139 Lagaudiers St. E., Montreal.	"	0 20	"	29 35	22 29	7 06	40279
" 23.....	"	40280 Mrs. Pelletier, 645 Demontrigny St. E., Montreal.	"	0 24	Montreal Dairy	23 19	15 37	7 82	40280





