PUBLICATION No. 608 ISSUED MARCH, 1938
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DOMINION OF CANADA—DEPARTMENT OF AGRICULTURE

An Economic Study of the Consumption of Milk and Cream in Certain Urban and Rural Districts of Canada

W. C. HOPPER
and
G. P. BOUCHER

MARKETING SERVICE
AGRICULTURAL ECONOMICS DIVISION

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FOREWORD

THIS bulletin presents the results of a study of the consumption of fluid milk, cream and manufactured milk in certain localities of Canada and the relation of locality, income, size of family, and nationality to consumption. It is believed that such a study will be of interest to everybody concerned with the dairy industry in Canada. The study was undertaken by the Economics Branch with the assistance of the Dairy Branch of the Dominion Department of Agriculture. The Rural Economics Service of the Quebec Department of Agriculture assisted in that part of the study conducted in the province of Quebec.

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INTRODUCTION

It is an economic axiom that supply must be adjusted to demand, if satisfactory prices are to be obtained. This implies the necessity of knowing what demand is, quantitatively and qualitatively, in order to be able to make sound business decisions.

There has been a tendency on the part of producers and salesmen to concentrate their energies on creating demand by forcing their products on the market. A sounder policy would appear to be that of first determining the various factors which influence the demand.

Factors, other than salesmanship, influence demand. Among such factors are changes in social habits, changes in the products themselves, the need for complementary goods, a better knowledge of the product on the part of the consumers and the price of the product or service offered for sale. Numerous statistical studies of production and distribution and prices have been made, but the statistical studies of consumption have not been so numerous. This has been largely because it is difficult to obtain a satisfactory measure of consumption.

Officials of the various departments of agriculture, dairy associations and councils and members of numerous boards of health are constantly in need of basic economic data on consumption of milk and cream. Such agencies are always interested to know if their efforts to teach the public the health and food value of milk are having any appreciable effect. Milk producers and distributors also are in need of statistical data on consumption which will help them in planning their businesses. It is with a view to supplying such information that this survey has been made. It is the first comprehensive study of its kind to be undertaken in Canada.[1]

The immediate purpose of the study is to learn what factors affect the consumption of milk and cream and to ascertain the kinds of beverages which compete with milk. Particular attention has been given to the relationship between the consumption of milk and the annual family income, the nationality and the occupation of the head of the family and the size of the individual family. The family unit has been given considerable attention because, by many, it is considered to be the real consuming unit.

It should be made clear at the outset that in Chapters I and II milk and cream consumed in the form of butter and cheese, and milk and cream used in purchased products such as bread and ice cream, are not included in the figures presented of the consumption of milk and cream. Only milk and cream used directly as such in fluid form is included. Chapter III deals with the consumption of evaporated milk, condensed milk and buttermilk. The figures given in this chapter of the report are not included in the figures for the consumption of fluid milk given in Chapter I.

Enumerators engaged in the study went from house to house interviewing housewives who were asked to answer the questions on the enumerators' ques-

[1] In 1931 the Economics Branch of the Dominion Department of Agriculture with the Extension Service of the Nova Scotia Department of Agriculture and the co-operation of the Extension Department of St. Francis Xavier University, made a study of the marketing of milk in the Sydney-Glace Bay area of Nova Scotia. Included in this study was a survey of the consumption of milk in the area mentioned.

tionnaire blank.[1] Every effort possible was made to obtain a representative sample of the various cities, villages and farm areas studied.

Areas Surveyed.—Cities, villages and farm areas were surveyed in the three provinces of Ontario, Quebec and Alberta. The three cities selected were Oshawa in the province of Ontario, Quebec city in the province of Quebec, and Calgary in the province of Alberta. The three villages selected were Uxbridge in the province of Ontario, St. Romuald in the province of Quebec, and Claresholm in the province of Alberta.

Five farm areas were selected. In the provinces of Ontario and Quebec information was obtained in farm homes in cheese-producing and non-cheese producing areas. Farm homes in the vicinity of the city of Belleville were chosen as the cheese-producing area for Ontario, while the non-cheese producing farm area for this province was in the vicinity of Columbus and Oshawa. The two parishes of St. Pierre and Ste-Famille on the Island of Orleans were the cheese-producing areas for the province of Quebec and the parish of Ancienne Lorette was the non-cheese producing area for the same province. No division of a cheese-producing or non-cheese producing area was made for the province of Alberta. The farm homes visited were in the vicinity of Calgary.

[1] In connection with this study, the authors wish to acknowledge the assistance of the following members of the Economics Branch who helped with the field work: C. V. Parker, G. H. Craig, B. E. Shuart. Mr. G. Michaud, of the Rural Economics Service, Quebec, also assisted with the field work in that part of the survey conducted in the province of Quebec and Miss B. E. Shuart gave assistance with the statistical work.

Chapter I

CONSUMPTION OF MILK

Locality.—The average daily per capita and per family consumption of milk and the amount and proportion of milk used as a beverage in the households in various cities, villages and farming communities studied is shown in Table 1.

Table 1.—Daily Per Capita Consumption of Milk and Amount Used as a Beverage by 3,213 Families in Certain Localities of Canada, 1935

Locality	Number of families	Number of persons	Per capita consumption per day			Family consumption per day	
			Total consumption	Used as a beverage	Proportion used as a beverage	Total consumption	Used as a beverage
			pints	pints	%	pints	pints
Cities—							
Oshawa	816	3,365	0·71	0·37	52	2·92	1·51
Quebec City	790	4,686	0·68	0·50	73	4·05	2·94
Calgary	996	3,995	0·74	0·44	59	2·96	1·75
Total or average for cities	2,602	12,046	0·71	0·44	62	3·28	2·04
Villages—							
Uxbridge	102	345	0·73	0·34	47	2·45	1·16
St. Romuald	48	287	0·40	0·22	54	2·38	1·30
Claresholm	101	432	0·70	0·39	56	3·01	1·67
Total or average for villages	251	1,064	0·63	0·33	52	2·67	1·40
Farm Areas—							
Ontario rural cheese producing area	50	222	0·96	0·47	49	4·26	2·07
Ontario rural non-cheese producing area	52	236	0·85	0·30	35	3·84	1·34
Quebec rural cheese producing area	49	361	1·20	1·01	84	8·85	7·41
Quebec rural non-cheese producing area	108	772	0·74	0·55	75	5·30	3·96
Alberta rural area	101	407	1·40	0·81	58	5·64	3·26
Total or average for farm areas	360	1,998	1·00	0·65	65	5·52	3·59
Grand total or average	3,213	15,108	0·74	0·46	62	3·48	2·16

The families in the farm areas visited had a higher daily average per capita consumption of milk than was found among the families visited in the cities and villages (Table 1 and Figure 1). It was 1·00 pint, while the figures for

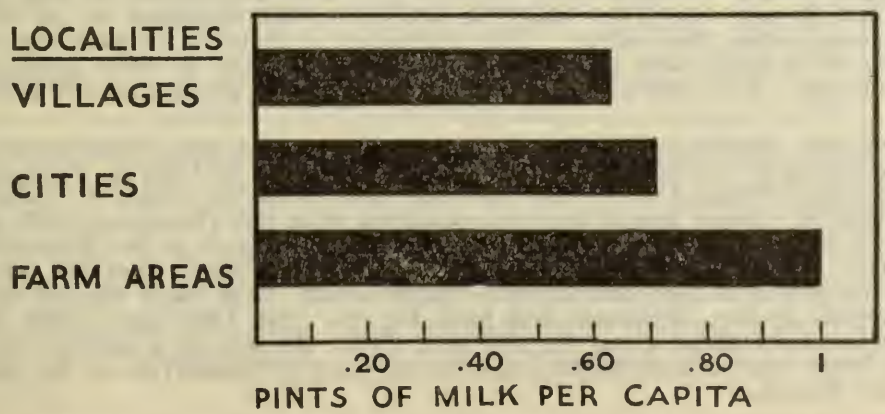

Fig. 1.—Average consumption of milk in certain localities of Canada—1935.

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cities and villages were 0·71 pint and 0·63 pint respectively. On a family basis, the farm areas showed a daily consumption of 5·52 pints, while the figures for cities and villages were 3·28 pints and 2·67 pints respectively. The proportion of the household milk used as a beverage was 65 per cent in farm areas, 62 per cent in cities and 52 per cent in villages. For the 3,213 families studied, the per capita consumption of milk per day was 0·74 pint and the utilization of milk as a beverage 0·46 pint per capita per day.[1] The amount used as a beverage represented 62 per cent of all the milk consumed. The per family consumption of milk per day was 3·48 pints and the utilization of milk as a beverage 2·16 pints per day.

Of the three cities, Quebec city showed a somewhat lower per capita consumption with a higher proportion of milk being utilized as a beverage, which may be partly explained by the fact that families are much larger in that city. As a matter of fact, the daily family consumption of milk was more than one pint higher in Quebec city than in Oshawa or Calgary, and the average amount used as a beverage by each family was also more than one pint higher in Quebec city than in the other two cities. Calgary had the highest average per capita consumption and Oshawa the lowest average family consumption.

Of the three villages, Saint Romuald showed the lowest per capita and per family consumption of milk, while the proportion which was used as a beverage was not much different from the average for the three villages. Uxbridge and Claresholm had almost the same total per capita consumption of milk but the proportion of milk used as a beverage and the family consumption of milk were somewhat higher in Claresholm.

A definitely higher consumption of milk and a higher utilization of milk as a beverage was found in the rural cheese-producing areas of Ontario and Quebec than in the rural non-cheese-producing areas. The Alberta farm area showed the highest per capita consumption of milk. On a family basis, however, more milk was consumed in the Quebec rural cheese-producing area than in the Alberta rural area. It will be observed that only a small number of farm homes were visited.

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[1] There is a tendency for the rates of milk consumption to be high due to a bias in the reports by housewives. W. C. Waite and R. W. Cox of University Farm, St. Paul, Minnesota (A Study of the Consumption of Dairy Products in Minneapolis, 1934) estimated the bias to be about 15 per cent. F. F. Liniger and H. Metzger, in a bulletin entitled "The Consumption of Dairy Products by 1,370 Families in Philadelphia, 1930," estimated the figure at about 11·4 per cent. The estimate of T. K. Cowden and A. Sturges in another study in Pennsylvania was 11·5 per cent. If the bias were 11 per cent for the areas surveyed in Canada, the per capita consumption would be 0·66 pint per day, if it were 15 per cent the per capita consumption would be 0·63 pint per day instead of 0·74 as reported in this study. No change has been made in the figures obtained in this study because no attempt was made to learn whether or not there was any overestimation on the part of the consumers who gave the data on their consumption, except in the case of Calgary and Oshawa. Calculations made by the Calgary Board of Public Utility Commissioners indicate that the consumption of milk in that city is between 15 and 20 per cent lower than the average of the estimates of the housewives who gave information during this survey. This difference is probably in part the result of overestimates, but it is likely also that many housewives included in their estimates their purchases of "superior" milk which has a butterfat content of 10 per cent and is usually considered as cream.

According to information gathered from milk and cream distributors in 1937 by Dr. C. S. Dickinson, of the Local Board of Health of the city of Oshawa, daily sales of milk to Oshawa consumers averaged 0·59 pint and the daily sales of cream to Oshawa consumers averaged 0·12 pint. These figures may be compared with the averages of 0·71 and 0·13 pint, respectively, in the survey made in 1935 by the Economics Branch of the Dominion Department of Agriculture. As the figures quoted are not for the same years, they are not entirely comparable, but as habits of food consumption change slowly, it is likely that if the distributors' sales as reported by Dr. Dickinson had been for the year 1935 they would not have been greatly different from those given for the year 1937. If this is a correct assumption, it is evident that there was some overestimation on the part of housewives in the survey made by the Economics Branch.

Family Income.—There was a very direct relationship between consumption of milk and family income. With a higher family income, there was a higher per capita and a higher per family consumption of milk (Table 2 and Figure 2). There was a range of 0·32 pint in the per capita consumption of

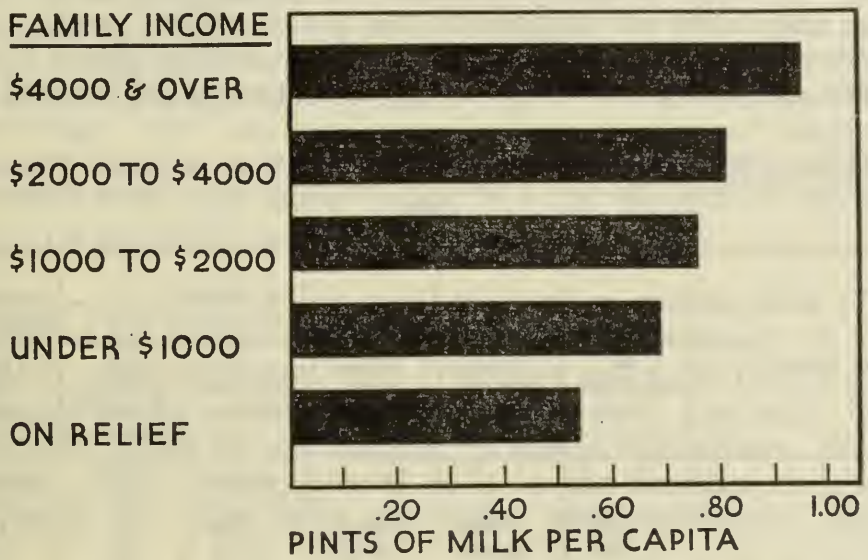

Fig. 2.—Relation of consumption of milk to family income in certain localities of Canada—1935.

milk between people in the relief group and people with an income of $4,000 and over. In family consumption, the range between the same groups was as high as 2·55 pints. The proportion of milk used as a beverage was exactly the same for families with incomes varying from less than $1,000 to $4,000; somewhat lower for families on relief and proportionately higher for families with incomes of over $4,000.

Table 2.—Daily Per Capita Consumption of Milk and Amount Used as a Beverage as Related to Family Income, 3,213 Families in the Provinces of Quebec, Ontario and Alberta, 1935

Family income	Number of families	Number of persons	Per capita consumption per day			Family consumption per day	
			Total consumption	Used as a beverage	Proportion used as a beverage	Total consumption	Used as a beverage
			pints	pints	%	pints	pints
On Relief	189	921	0·54	0·31	57	2·63	1·50
Under $1,000	1,263	5,868	0·69	0·43	62	3·21	2·00
$1,000–$2,000	1,060	4,978	0·76	0·47	62	3·59	2·21
$2,000–$4,000	544	2,486	0·81	0·50	62	3·70	2·31
$4,000 and over	151	826	0·95	0·63	67	5·18	3·47
Not stated	6	29	0·97	0·55	57	4·66	2·67
Total or average	3,213	15,108	0·74	0·46	62	3·48	2·16

The per capita daily consumption for the group receiving relief was 0·54 of a pint. This was higher than the figure of 0·36 of a pint a day consumed by the low-wage group in the Sydney-Glace Bay area of Nova Scotia.[1] As this survey was made in 1931, it is possible that any unemployment assistance given to the low-wage group at that time was not on such a satisfactory dietetic basis as is the case in the present study. The average daily consumption per person for 562 families in all wage groups included in the Sydney-Glace Bay survey was 0·63 of a pint.

[1] See introduction.

National Types.—The relation between consumption of milk and national types is shown in Table 3. This classification by national types is a rather broad one. The term "Canadian," for instance, may and does include a number of families that might well have been listed as English, Welsh, Scotch or Irish. However, the striking similarity between the amounts of milk consumed by each of these national types suggests that all people of British origin might have been grouped together (Figure 3). The French Canadian group, located mostly in the Quebec area, showed a daily per capita consumption of 0·70 of a pint as

TABLE 3.—DAILY PER CAPITA AND PER FAMILY CONSUMPTION OF MILK AND AMOUNT USED AS A BEVERAGE AS RELATED TO NATIONAL TYPES, 3,213 FAMILIES IN THE PROVINCES OF QUEBEC, ONTARIO AND ALBERTA, 1935

National types	Number of families	Number of persons	Per capita consumption per day			Family consumption per day	
			Total consumption	Used as a beverage	Proportion used as a beverage	Total consumption	Used as a beverage
			pints	pints	%	pints	pints
American	69	298	0·85	0·49	58	3·65	2·10
Canadian	1,153	4,609	0·79	0·44	56	3·16	1·76
English and Welsh	482	1,832	0·77	0·41	54	2·91	1·56
Irish and Scotch	289	1,205	0·77	0·44	57	3·22	1·83
Ukrainian	84	403	0·77	0·45	59	3·69	2·18
French Canadian	967	5,957	0·70	0·51	73	4·29	3·14
German	23	132	0·66	0·29	43	3·81	1·65
Jewish	27	122	0·57	0·31	54	2·57	1·39
Others	119	550	0·61	0·36	59	2·82	1·66
Total or average	3,213	15,108	0·74	0·46	62	3·48	2·16

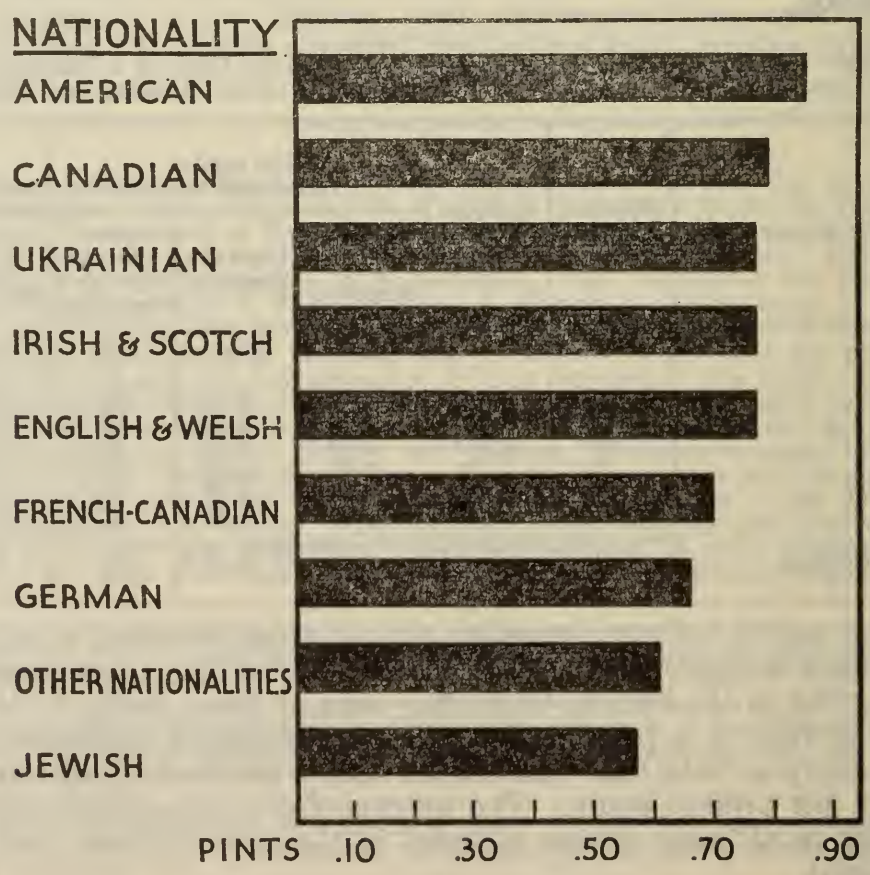

FIG. 3.—Relation of consumption of milk to nationality, in certain localities of Canada—1935.

compared with an average of 0·74 for all national types. However, the family consumption of milk by the same French Canadian group was 4·29 pints as compared with an average of 3·48 pints for all national types. The French Canadian families visited consumed more milk than families belonging to any other national type, but because of larger families the per capita consumption by the French Canadian group was lower than that for most of the other national types. The French Canadian group also showed the highest proportion of milk used as a beverage. The American group had an average per capita consumption of milk of 0·85 of a pint. This was a higher per capita consumption of milk than is shown for any other group, but the number of families in the American group was rather small.

Occupation.—A study of the relation between consumption of milk and occupation showed the farmer group to be the largest consumer of milk with a daily average per capita consumption of 1·04 pints and a per family consumption of 5·48 pints (Table 4). There was a very noticeable similarity between the milk consumption habits of the families of small businessmen, salesmen and clerical workers. The consumption of milk in the families of labourers was quite low (Figure 4). The daily per capita consumption for the unskilled

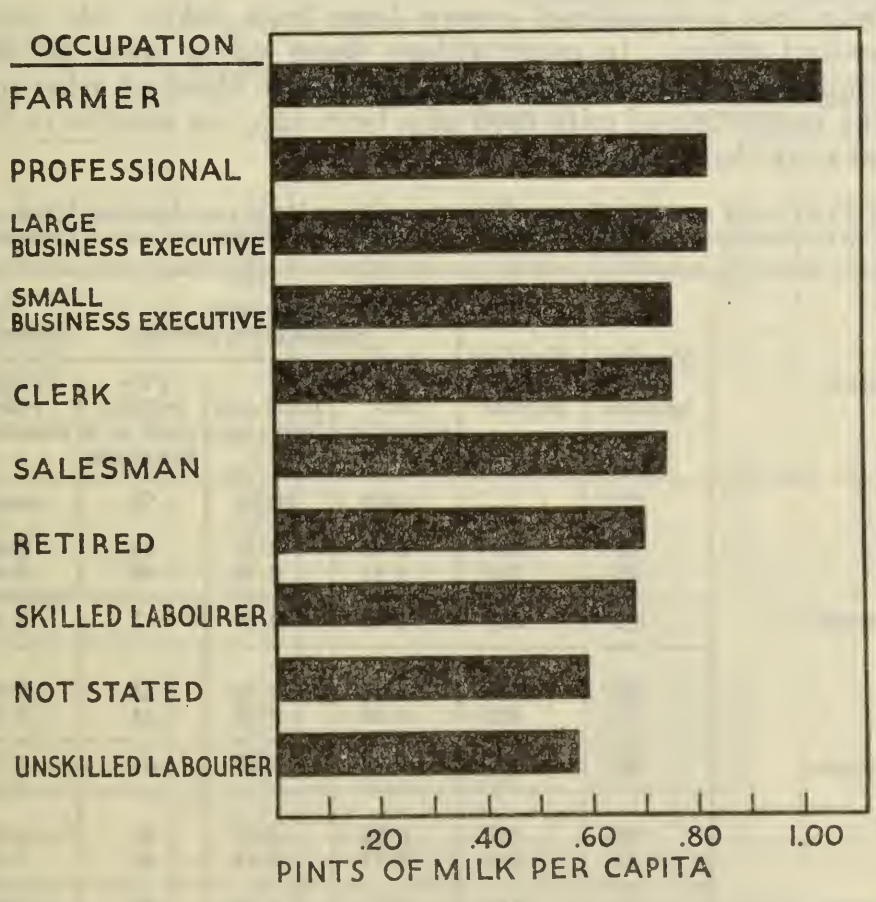

FIG. 4.—Relation of consumption of milk to occupation, in certain localities of Canada—1935.

labourer group was only 0·57 of a pint and the daily per capita consumption for the skilled labourer group was 0·68 of a pint. There was not much variation in the proportion of milk used as a beverage by various occupational groups except in the case of the "retired" group. The proportion of milk used as a beverage by the latter group was only 42 per cent as compared with an average of 62 per cent for all groups.

TABLE 4.—DAILY PER CAPITA AND PER FAMILY CONSUMPTION OF MILK AND AMOUNT USED AS A BEVERAGE AS RELATED TO OCCUPATION, 3,213 FAMILIES IN URBAN AND RURAL AREAS IN THE PROVINCES OF QUEBEC, ONTARIO AND ALBERTA, 1935

Occupation group	Number of families	Number of persons	Per capita consumption per day			Family consumption per day	
			Total consumption	Used as a beverage	Proportion used as a beverage	Total consumption	Used as a beverage
			pints	pints	%	pints	pints
Farmer	333	1,751	1·04	0·67	64	5·48	3·52
Professional	315	1,492	0·82	0·55	67	3·90	2·61
Large business executive	268	1,214	0·82	0·50	61	3·69	2·26
Small business executive	157	747	0·75	0·48	64	3·58	2·29
Clerk	308	1,397	0·75	0·49	65	3·42	2·22
Salesman	191	936	0·74	0·49	66	3·61	2·38
Retired	168	500	0·70	0·29	42	2·08	0·88
Skilled labourer	855	4,127	0·68	0·41	61	3·28	2·00
Unskilled labourer	484	2,321	0·57	0·33	58	2·72	1·59
Not stated	134	623	0·59	0·35	59	2·75	1·63

Villages.—The relationship between consumption of milk and occupation in the three villages of Uxbridge, St. Romuald and Claresholm is shown in Table 5. Only two occupational groups have been taken into consideration, i.e., labourers and others. In every village there was a lower per capita consumption of milk in the families of labourers than in those of other occupations. In general, the proportion of milk used as a beverage was smaller in the families of skilled and unskilled labourers.

TABLE 5.—DAILY PER CAPITA AND PER FAMILY CONSUMPTION OF MILK AND AMOUNT USED AS A BEVERAGE AS RELATED TO OCCUPATION IN THE VILLAGES OF UXBRIDGE, ST. ROMUALD AND CLARESHOLM, 1935

Occupation	Number of families	Number of persons	Per capita consumption per day			Family consumption per day	
			Total consumption	Used as a beverage	Proportion used as a beverage	Total consumption	Used as a beverage
			pints	pints	%	pints	pints
Uxbridge—							
Labourers	34	136	0·60	0·27	44	2·40	1·06
All others	68	209	0·81	0·39	49	2·48	1·20
Total or average	102	345	0·73	0·34	47	2·45	1·16
St. Romuald—							
Labourers	28	182	0·29	0·13	43	1·90	0·82
All others	20	105	0·58	0·37	64	3·05	1·95
Total or average	48	287	0·40	0·22	54	2·38	1·30
Claresholm—							
Labourers	34	167	0·69	0·36	56	3·40	1·76
All others	67	265	0·71	0·42	59	2·82	1·65
Total or average	101	432	0·70	0·39	56	3·01	1·67
Total or average for all three villages	251	1,064	0·63	0·33	52	2·67	1·40

Rural Areas.—There appeared to be a definitely higher consumption of milk by farmers than by non-farmers in various rural areas of Ontario, Quebec and Alberta (Table 6). Farmers' families consumed an average of 0·36 of a pint of milk per capita per day more than families of non-farmers. The per family consumption was also much higher among farmers than non-farmers, but there was not much difference in the proportion of milk used as a beverage.

TABLE 6.—DAILY PER CAPITA AND PER FAMILY CONSUMPTION OF MILK AND AMOUNT USED AS A BEVERAGE BY FARMERS AND NON-FARMERS IN RURAL AREAS OF ONTARIO, QUEBEC AND ALBERTA, 1935

Occupation	Number of families	Number of persons	Per capita consumption per day			Family consumption per day	
			Total consumption	Used as a beverage	Proportion used as a beverage	Total consumption	Used as a beverage
			pints	pints	%	pints	pints
Farmers	299	1,629	1·06	0·69	65	5·79	3·75
Non-farmers	61	369	0·70	0·47	68	4·21	2·85
Total or average	360	1,998	1·00	0·65	65	5·52	3·59

TABLE 7.—DAILY PER CAPITA AND PER FAMILY CONSUMPTION OF MILK AND AMOUNT USED AS A BEVERAGE AS RELATED TO FAMILY INCOME IN THE CITIES OF OSHAWA, QUEBEC AND CALGARY, 1935

Family Income	Number of families	Number of persons	Per capita consumption per day			Family consumption per day	
			Proportion used as a beverage	Used as a beverage	Proportion used as a beverage	Total consumption	Used as a beverage
			pints	pints	%	pints	pints
Oshawa—							
On Relief	53	213	0·75	0·39	53	3·00	1·58
Under $1,000	328	1,348	0·66	0·33	50	2·69	1·36
$1,000–$2,000	300	1,272	0·72	0·38	52	3·07	1·61
$2,000–$4,000	104	401	0·78	0·38	49	2·99	1·47
$4,000 and over	31	131	0·84	0·49	59	3·54	2·09
Total or average	816	3,365	0·71	0·37	52	2·92	1·51
Quebec City—							
On Relief	60	351	0·38	0·28	72	2·24	1·62
Under $1,000	286	1,641	0·55	0·40	74	3·14	2·32
$1,000–$2,000	245	1,465	0·75	0·55	74	4·47	3·30
$2,000–$4,000	140	819	0·83	0·59	71	4·86	3·43
$4,000 and over	58	404	0·95	0·66	69	6·63	4·60
Total or average*	790	4,680	0·68	0·50	73	4·04	2·94
Calgary—							
On Relief	67	318	0·55	0·28	50	2·60	1·31
Under $1,000	272	1,001	0·65	0·35	54	2·41	1·30
$1,000–$2,000	343	1,362	0·75	0·45	60	2·99	1·80
$2,000–$4,000	259	1,062	0·80	0·49	61	3·29	2·17
$4,000 and over	54	249	0·94	0·65	69	4·35	2·99
Total or average†	996	3,992	0·74	0·44	59	2·96	1·75
All three cities—							
On Relief	180	882	0·53	0·31	57	2·60	1·49
Under $1,000	886	3,990	0·61	0·37	60	2·75	1·65
$1,000–$2,000	888	4,099	0·74	0·47	63	3·43	2·15
$2,000–$4,000	503	2,282	0·81	0·51	63	3·67	2·30
$4,000 and over	143	784	0·93	0·63	68	5·10	3·45
Total or average‡	2,602	12,046	0·71	0·44	62	3·28	2·04

*One family did not state its income.
†One family did not state its income.
‡Two families did not state their income.

Cities.—The relationship between the daily per capita and per family consumption of milk and the amount used as a beverage as related to family income in the three cities of Oshawa, Quebec and Calgary is shown in Table 7. There was a direct relationship between per capita consumption of milk and the annual family income for every city except Oshawa, where there was a larger per capita consumption of milk in the "relief" group than in the group with incomes under $1,000. This must be due in part to the fact that special provisions were made by the relief authorities in that city to provide the unemployed with milk.

When data for all three cities were taken, as income increased, so did the proportion of milk used as a beverage (Table 7). A separate study of each of the three cities shows that this was not true of Oshawa and Quebec City. In Oshawa, there was not much difference in the proportion of milk used as a beverage by four of the five income groups. It varied from 49 per cent to 52 per cent. For the highest income group ($4,000 and over), the proportion of milk used as a beverage was as high as 59 per cent. In the city of Quebec, the proportion of milk used as a beverage varied from 69 per cent to 74 per cent for the five income groups. The highest income group ($4,000 and over) had the lowest proportion of milk used as beverage.

Frequency Distribution.—The most common rates of consumption of milk for all localities were between 0·91 and 1·00 pint per person per day but a very large group was found consuming from 0·41 to 0·50 pint per day. Rates of consumption less than 0·21 pint or more than 1·00 pint were very few in number (Table 8 and Figure 5).

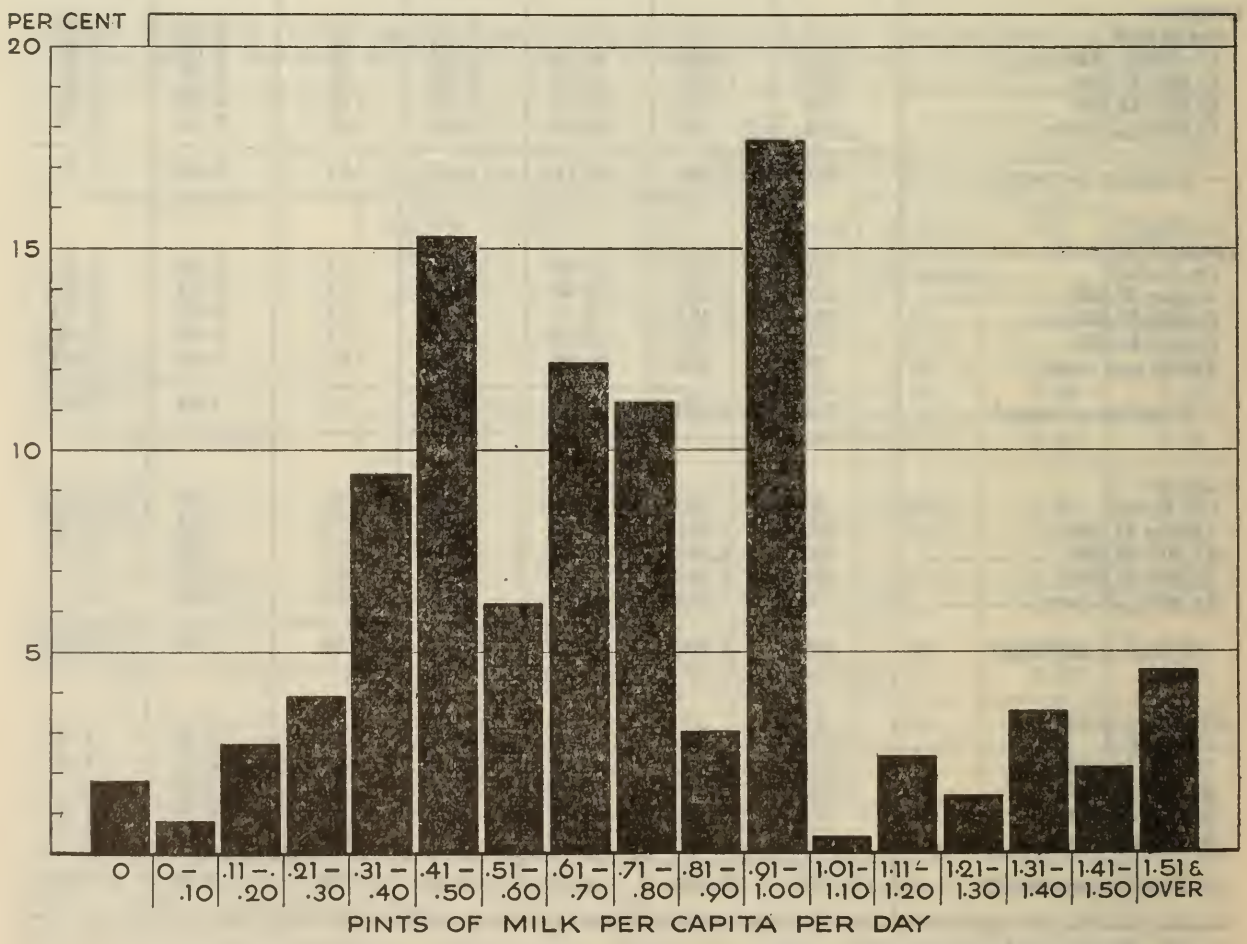

FIG. 5.—Frequency distribution of families consuming different quantities of milk, in certain localities of Canada—1935.

In the cities of Oshawa and Quebec the largest family groups were those with a daily per capita consumption of 0·41 to 0·50 pint and the second largest group consumed 0·91 to 1·00 pint a day. In Calgary the reverse was the case and the largest group had a consumption of approximately 1 pint per capita a day while the second largest group consumed approximately half a pint daily.

It is possible that there may be a certain lack of accuracy by housewives in reporting consumption, which tends to centre consumption around one-half, two-thirds, three-quarters and one pint per capita a day. It seems reasonable to suppose that a more accurate estimate would bring a more uniform distribution.

TABLE 8.—FREQUENCY DISTRIBUTION OF FAMILIES CONSUMING DIFFERENT QUANTITIES OF MILK IN CERTAIN LOCALITIES OF CANADA

Daily per capita consumption of milk	Oshawa		Quebec City		Calgary		All Urban and Rural Areas	
	Number of families	Proportion of families	Number of families	Proportion of families	Number of families	Proportion of families	Number of families	Proportion of families
Pints—		%		%		%		%
0·00	3	0·4	15	1·9	26	2·6	58	1·8
0·10 and under	1	0·1	11	1·4	9	0·9	26	0·8
0·11–0·20	8	1·0	44	5·6	19	1·9	87	2·7
0·21–0·30	19	2·3	46	5·8	35	3·5	127	3·9
0·31–0·40	86	10·5	73	9·2	97	9·7	304	9·4
0·41–0·50	163	20·0	124	15·7	156	15·7	525	16·3
0·51–0·60	62	7·6	56	7·1	49	4·9	201	6·2
0·61–0·70	118	14·5	85	10·8	132	13·3	394	12·3
0·71–0·80	109	13·4	91	11·5	108	10·8	362	11·3
0·81–0·90	21	2·6	33	4·2	27	2·7	98	3·1
0·91–1·00	147	18·0	100	12·7	211	21·2	569	17·7
1·01–1·10	.....	.....	2	0·3	3	0·3	7	0·2
1·11–1·20	16	2·0	19	2·4	26	2·6	79	2·4
1·21–1·30	11	1·4	14	1·8	14	1·4	48	1·5
1·31–1·40	20	2·5	28	3·5	43	4·3	114	3·5
1·41–1·50	17	2·1	12	1·5	20	2·0	68	2·1
1·51 and over	15	1·8	37	4·7	21	2·1	146	4·5

CONSUMPTION OF MILK AS A BEVERAGE

It is generally admitted that the per capita consumption of milk in Canada is lower than it should be. In the first table it is shown that the per capita consumption of milk in 3,213 families in various parts of Canada was only 0·74 of a pint per day. It should be remembered however, that this figure, as explained earlier, represents the consumption of milk used in liquid form in the household. It excludes all purchased products in the preparation of which milk may have been used, such as bread, cheese, ice cream, etc. Nor must it be considered as a national consumption figure, as the sample of 3,213 families used in the study is not necessarily representative of Canada as a whole. It has been thought advisable to ascertain the daily per capita consumption of milk by people drinking milk as a beverage in the families whose consumption was studied. The tables which follow give figures on the per capita consumption of milk by various groups of persons, i.e., women, men, boys and girls in various localities, who drank milk as a beverage.

Adults.—If Table 9 is compared with Table 1, it will be seen that in both cases the largest average per capita and per family consumption of milk was found in farm areas and the lowest per capita and per family consumption was in villages.

In Table 1, it was shown that Quebec City had the lowest per capita consumption of milk of all three cities, but Table 9 shows that men and women in

that city who drank milk as a beverage, had a higher daily per capita consumption than those in Calgary or Oshawa.

In the villages, Table 1 showed that in St. Romuald the per capita consumption of milk was about half as large as the per capita consumption in Uxbridge and Claresholm. Table 9 shows that the per capita consumption in St. Romuald of adults drinking milk was higher than the per capita consumption for those in Uxbridge and almost the same as the consumption in Claresholm.

TABLE 9.—DAILY PER CAPITA CONSUMPTION OF MILK BY 2,302 ADULTS CONSUMING MILK AS A BEVERAGE IN VARIOUS LOCALITIES OF CANADA, 1935

Locality	Women		Men		Adults	
	Number of women	Per capita consumption of milk	Number of men	Per capita consumption of milk	Number of adults	Per capita consumption of milk
		pints		pints		pints
Cities—						
Oshawa	184	0·81	288	1·01	472	0·93
Quebec City	332	1·27	350	1·42	682	1·35
Calgary	239	1·14	325	1·29	564	1·23
Total or average for cities	755	1·12	963	1·25	1,718	1·19
Villages—						
Uxbridge	47	0·78	30	0·86	77	0·81
St. Romuald	5	1·10	11	1·00	16	1·03
Claresholm	20	1·08	21	1·10	41	1·09
Total or average for villages	72	0·89	62	0·97	134	0·92
Farm areas—						
Ontario rural cheese-producing area	10	1·00	38	1·36	48	1·28
Ontario rural non-cheese-producing area	7	1·00	17	0·94	24	0·96
Quebec rural cheese-producing area	50	1·60	44	1·78	94	1·68
Quebec rural non-cheese-producing area	77	1·25	70	1·18	147	1·22
Alberta rural area	37	1·38	100	2·07	137	1·88
Total or average for farm areas	181	1·35	269	1·62	450	1·51
Grand totals or averages	1,008	1·14	1,294	1·31	2,302	1·24

The per capita consumption of milk by adults drinking milk as a beverage was higher in rural cheese producing areas than in rural non-cheese producing areas. The highest per capita consumption was found in Alberta rural area and the lowest in the Ontario rural non-cheese producing area.

Boys.—The average daily per capita consumption of milk in all localities by 2,054 boys under 16 years of age who drank milk, was found to be about 1·32 pints per day (Table 10). There was not much variation from this average in cities, villages and farm areas. The average per capita consumption of milk as a beverage by city boys was 1·30 pints, 1·34 pints by boys in the villages and 1·44 pints in the farm areas. The lowest consumption for the three cities was in the city of Oshawa and the highest in the city of Calgary, there being a range of 0·30 of a pint in the per capita consumption for the two cities.

In the three villages, the lowest per capita consumption as a beverage was in St. Romuald and the highest in Claresholm. There was a range of 0·60 of a pint in the consumption for the two villages.

The lowest per capita consumption of milk by farm boys who drank milk as a beverage was in the rural non-cheese producing areas, the Alberta rural area having the highest figure.

The youngest age group (under 6 years) had the highest per capita consumption. The average for boys in this group was 1·39 pints per day. In the "6-12 years group" it was 1·25 pints per day, and for the "13-16 years group" it was 1·28 pints.

TABLE 10.—DAILY PER CAPITA CONSUMPTION OF MILK BY 2,054 BOYS CONSUMING MILK AS A BEVERAGE IN CERTAIN LOCALITIES OF CANADA, 1935

Locality	Under 6 years		6–12 years		13–16 years		All boys	
	No. of boys	Per capita consumption of milk	No. of boys	Per capita consumption of milk	No. of boys	Per capita consumption of milk	No. of boys	Per capita consumption of milk
		pints		pints		pints		pints
Cities—								
Oshawa	181	1·23	186	1·10	74	1·09	441	1·15
Quebec city	322	1·38	300	1·18	108	1·24	730	1·28
Calgary	202	1·47	225	1·42	83	1·47	510	1·45
Total or average for cities	705	1·37	711	1·23	265	1·27	1,681	1·30
Villages—								
Uxbridge	11	1·28	11	1·22	7	1·43	29	1·29
St. Romuald	15	1·10	8	0·69	2	0·50	25	0·92
Claresholm	24	1·45	31	1·64	8	1·25	63	1·52
Total or average for villages	50	1·31	50	1·40	17	1·24	117	1·34
Farm Areas—								
Ontario rural cheese producing area	10	2·00	8	1·00	5	1·10	23	1·46
Ontario rural non-cheese-producing area	3	1·90	10	1·38	3	0·73	16	1·36
Quebec rural cheese-producing area	34	1·68	32	1·42	5	1·80	71	1·57
Quebec rural non-cheese-producing area	37	1·48	40	1·13	21	1·09	98	1·26
Alberta rural area	18	1·42	17	1·76	13	1·85	48	1·66
Total average for farm areas	102	1·60	107	1·33	47	1·36	256	1·44
Grand total or average	857	1·39	868	1·25	329	1·28	2,054	1·32

Girls.—The average daily per capita consumption of milk as a beverage in all localities by 1,763 girls under 16 years of age was about 1·25 pints (Table 11). It was 1·36 pints per capita in farm areas, 1·16 pints per capita in villages and 1·23 pints per capita in cities. The highest per capita consumption of milk by girls drinking milk was in the city of Calgary, where it was 1·40 pints, Quebec City had the second highest per capita consumption with an average of 1·21 pints and Oshawa had the lowest with an average of 1·11 pints.

The highest consumption of milk by girls in villages drinking milk was found in Claresholm. The average per capita consumption was 1·39 pints. In Uxbridge the per capita consumption was 1·09 pints and in St. Romuald it was 0·91 of a pint.

Girls living in cheese producing farm areas consumed more milk as a beverage than girls living in the non-cheese producing farm areas. In the Alberta farm area the per capita consumption of milk by girls was 1·60 pints. This is about the same as the per capita consumption for the two cheese producing farm areas.

TABLE 11.—DAILY PER CAPITA CONSUMPTION OF MILK BY 1,763 GIRLS CONSUMING MILK AS A BEVERAGE IN CERTAIN LOCALITIES OF CANADA, 1935

Locality	Under 6 years		6-12 years		13-16 years		All girls	
	No. of girls	Per capita consumption of milk	No. of girls	Per capita consumption of milk	No. of girls	Per capita consumption of milk	No. of girls	Per capita consumption of milk
		pints		pints		pints		pints
Cities—								
Oshawa	162	1·16	150	1·04	65	1·17	377	1·11
Quebec city	280	1·33	254	1·13	110	1·07	644	1·21
Calgary	125	1·51	156	1·36	90	1·35	371	1·40
Total or average for cities	567	1·32	560	1·17	265	1·19	1,392	1·23
Villages—								
Uxbridge	12	1·33	13	0·94	8	0·95	33	1·09
St. Romuald	16	1·13	9	0·44	2	1·30	27	0·91
Claresholm	14	1·14	18	1·36	9	1·84	41	1·39
Total or average for villages	42	1·19	40	1·02	19	1·41	101	1·16
Farm areas—								
Ontario rural cheese-producing area	9	1·66	7	1·93	4	0·88	20	1·60
Ontario rural non-cheese-producing area	15	1·31	10	0·80	4	0·93	29	1·08
Quebec rural cheese-producing area	32	1·47	21	1·76	7	1·50	60	1·58
Quebec rural non-cheese-producing area	48	1·14	50	1·19	20	1·11	118	1·20
Alberta rural area	16	1·50	19	1·76	8	1·63	43	1·60
Total or average for farm areas	120	1·36	107	1·40	43	1·27	270	1·36
Grand totals or averages	729	1·32	707	1·20	327	1·21	1,763	1·25

Family Income.—With a higher family income there was a higher per capita consumption of milk as a beverage amongst older boys and older girls (Tables 12 and 13). There was not much relationship between family income and the consumption of milk as a beverage by adult persons (Table 14). In the case of children there was a tendency for the consumption of milk to increase with an increase in family income. The average daily per capita consumption of milk by both adults and children drinking milk was about 1·27 pints per day. It was 1·29 pints per capita for children and 1·24 pints per capita for adults. Men consumed an average of 1·31 pints per capita and women an average of 1·14 pints per capita.

TABLE 12.—RELATION BETWEEN FAMILY INCOME AND DAILY PER CAPITA CONSUMPTION OF MILK BY BOYS CONSUMING MILK AS A BEVERAGE IN URBAN AND RURAL AREAS IN THE PROVINCES OF ONTARIO, QUEBEC AND ALBERTA, 1935

Family income	Under 6 years		6-12 years		13-16 years		All boys	
	No. of boys	Per capita consumption of milk	No. of boys	Per capita consumption of milk	No. of boys	Per capita consumption of milk	No. of boys	Per capita consumption of milk
		pints		pints		pints		pints
On relief	50	1·25	54	0·92	16	0·81	120	1·04
Under $1,000	331	1·45	308	1·20	109	1·17	748	1·31
$1,000-$2,000	314	1·35	288	1·27	125	1·29	727	1·31
$2,000-$4,000	133	1·40	155	1·34	53	1·52	341	1·39
$4,000 and over	28	1·34	61	1·52	26	1·48	115	1·47
Total or average*	857	1·39	868	1·25	329	1·28	2,054	1·32

* One family did not state its income.

TABLE 13.—RELATION BETWEEN FAMILY INCOME AND DAILY PER CAPITA CONSUMPTION OF MILK BY GIRLS CONSUMING MILK AS A BEVERAGE IN URBAN AND RURAL AREAS IN THE PROVINCES OF ONTARIO QUEBEC, AND ALBERTA, 1935

Family income	Under 6 years		6-12 years		13-16 years		All girls	
	No. of girls	Per capita consumption of milk	No. of girls	Per capita consumption of milk	No. of girls	Per capita consumption of milk	No. of girls	Per capita consumption of milk
		pints		pints		pints		pints
On relief	47	1·09	41	1·05	27	0·84	115	1·02
Under $1,000	313	1·40	239	1·17	104	1·14	656	1·27
$1,000 to $2,000	238	1·22	256	1·18	118	1·17	612	1·17
$2,000 to $4,000	105	1·40	111	1·23	53	1·39	269	1·33
$4,000 and over	25	1·48	57	1·41	24	1·79	106	1·51
Total or average*	729	1·32	707	1·20	327	1·21	1,763	1·25

* One family did not state its income.

TABLE 14.—DAILY PER CAPITA CONSUMPTION OF MILK AS A BEVERAGE BY 2,302 ADULTS AND 3,817 CHILDREN IN URBAN AND RURAL AREAS IN THE PROVINCES OF ONTARIO, QUEBEC AND ALBERTA, 1935

Family income	Women		Men		Adults		Children		Children and adults	
	No. of women	Per capita consumption of milk	No. of men	Per capita consumption of milk	No. of adults	Per capita consumption of milk	No. of children	Per capita consumption of milk	No. of persons	Per capita consumption of milk
		pints		pints		pints		pints		pints
On relief	37	0·96	31	0·98	68	0·97	235	1·03	303	1·02
Under $1,000	390	1·28	441	1·46	831	1·37	1,404	1·29	2,235	1·32
$1,000-$2,000	321	1·03	452	1·25	773	1·16	1,339	1·26	2,112	1·22
$2,000–$4,000	176	1·11	259	1·16	435	1·14	610	1·36	1,045	1·27
$4,000 and over	81	1·11	108	1·49	189	1·33	221	1·49	410	1·42
Total or average*	1,008	1·14	1,294	1·31	2,302	1·24	3,817	1·29	6,119	1·27

* Three families did not state their income.

Occupational Groups.—There was a direct relationship between consumption of milk and family income in the families of professional men (Table 15). The higher the income, the larger the consumption of milk, both as a beverage and for household purposes. Similar relationships were shown in other indi-

TABLE 15.—DAILY PER CAPITA AND PER FAMILY CONSUMPTION OF MILK AND AMOUNT USED AS A BEVERAGE AS RELATED TO FAMILY INCOME, 855 FAMILIES OF PROFESSIONAL MEN IN CERTAIN DISTRICTS IN THE PROVINCES OF ONTARIO, QUEBEC AND ALBERTA, 1935

Family income	Number of families	Number of persons	Per capita consumption per day			Family consumption per day	
			Total consumption	Used as a beverage	Proportion used as a beverage	Total consumption	Used as a beverage
			pints	pints	%	pints	pints
Under $1,000	25	98	0·69	0·38	55	2·71	1·50
$1,000–$2,000	86	373	0·77	0·52	67	3·36	2·23
$2,000–$4,000	150	706	0·81	0·53	66	3·80	2·51
$4,000 and over	53	311	0·96	0·69	72	5·63	4·05
Total or average*	315	1,492	0·82	0·55	67	3·90	2·61

* There was one family on relief.

vidual occupational groups. It has not been considered necessary to include tables showing the relation between consumption of milk and family income for the other individual occupational groups except the two labourer groups.

Tables 16 and 17 show the predominance of income as a factor influencing the consumption of milk in general household use and as a beverage. Labourers might be just as large consumers of milk as any other people if their incomes were higher. As a matter of fact, there was a marked increase in the rate of milk consumption by labourers with a rise in income.

TABLE 16.—DAILY PER CAPITA AND PER FAMILY CONSUMPTION OF MILK AND AMOUNT USED AS A BEVERAGE AS RELATED TO FAMILY INCOME, 855 FAMILIES OF SKILLED LABOURERS IN CERTAIN DISTRICTS IN THE PROVINCES OF ONTARIO, QUEBEC AND ALBERTA, 1935

Family income	Number of families	Number of persons	Per capita consumption per day			Family consumption per day	
			Total consumption	Used as a beverage	Proportion used as a beverage	Total consumption	Used as a beverage
			pints	pints	%	pints	pints
Under $1,000	82	335	0·63	0·39	62	2·59	1·60
$1,000–$2,000	175	828	0·77	0·50	65	3·63	2·35
$2,000 and over	48	220	0·89	0·61	69	4·09	2·80
Total or average*	308	1,397	0·75	0·49	65	3·42	2·22

* There were three families on relief.

TABLE 17.—DAILY PER CAPITA AND PER FAMILY CONSUMPTION OF MILK AND AMOUNT USED AS A BEVERAGE AS RELATED TO FAMILY INCOME, 484 FAMILIES OF UNSKILLED LABOURERS IN VARIOUS DISTRICTS IN THE PROVINCES OF ONTARIO, QUEBEC AND ALBERTA, 1935

Family income	Number of families	Number of persons	Per capita consumption per day			Family consumption per day	
			Total consumption	Used as a beverage	Proportion used as a beverage	Total consumption	Used as a beverage
			pints	pints	%	pints	pints
On relief	55	272	0·51	0·31	61	2·51	1·53
Under $1,000	329	1,549	0·54	0·32	59	2·56	1·51
$1,000–$2,000	87	431	0·66	0·37	56	3·29	1·84
$2,000–$4,000	12	66	0·73	0·42	58	4·00	2·30
Total*	484	2,321	0·57	0·33	58	2·72	1·59

* One family did not state its income.

CONSUMPTION OF MILK AND SIZE OF FAMILY

In Table 18 the families interviewed are grouped according to the number of adults in each family. As the number of adults per family increased, so the daily per capita consumption of milk for all household purposes declined. The same tendency is shown when the grouping was made according to the number of children in each family (Table 19), though in this case the trend was not so well marked. These two tables are presented graphically in Figure 6.

TABLE 18.—RELATION BETWEEN DAILY PER CAPITA CONSUMPTION OF MILK AND NUMBER OF ADULTS IN THE FAMILY, 3,202 FAMILIES IN URBAN AND RURAL AREAS OF THE PROVINCES OF ONTARIO, QUEBEC AND ALBERTA, 1935

Number of adults	Number of families	Number of persons in families	Per capita consumption of milk
			pints
1	60	99	0·88
2	1,350	4,923	0·81
3	771	3,383	0·75
4	502	2,698	0·71
5	262	1,718	0·69
6	257	2,183	0·67

TABLE 19.—RELATION BETWEEN DAILY PER CAPITA CONSUMPTION OF MILK AND NUMBER OF CHILDREN IN FAMILY, 3,130 FAMILIES IN URBAN AND RURAL AREAS IN THE PROVINCES OF ONTARIO, QUEBEC AND ALBERTA, 1935

Number of children	Number of families	Number of persons in families	Per capita consumption of milk
0	1,305	4,259	0·72
1	659	2,701	0·78
2	536	2,679	0·77
3	261	1,599	0·75
4	184	1,325	0·71
5	120	980	0·75
6	65	634	0·68

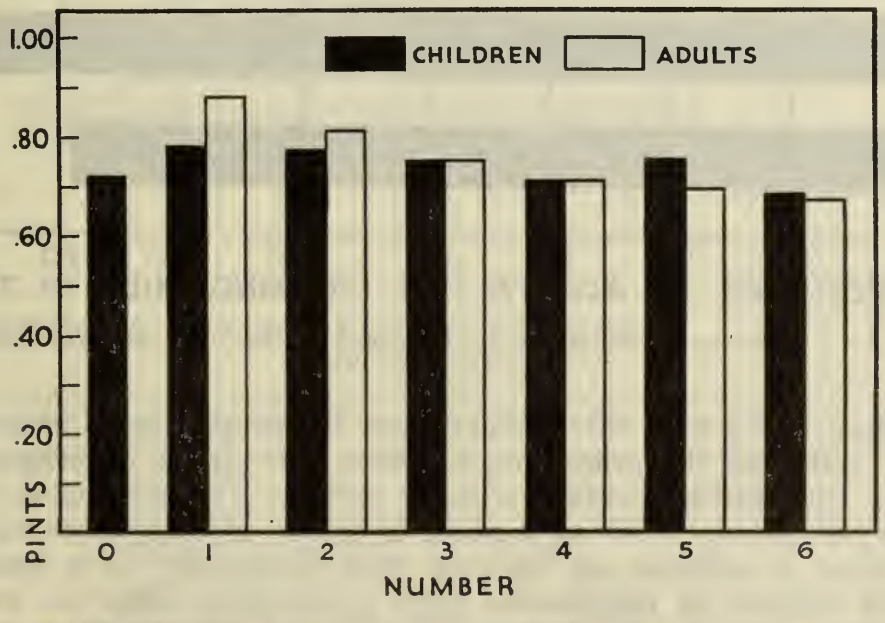

FIG. 6.—Daily per capita consumption of milk by families grouped according to number of children and number of adults per family.

PROPORTION OF ADULTS AND CHILDREN NOT DRINKING MILK AS A BEVERAGE

Adults.—As many as 77 per cent of the adults in the 3,213 families visited did not drink milk as a beverage. In the families on relief, 88 per cent of the adults did not drink milk, while in the families with an income of over $4,000 a year, it amounted to 68 per cent. (Table 20 and Figure 7).

TABLE 20.—PROPORTION OF ADULTS NOT DRINKING MILK WITHIN VARIOUS INCOME LEVELS

Family income	Number of families	Proportion of adults not drinking milk
		%
On relief	189	88
Under $1,000	1,263	79
$1,000–$2,000	1,060	77
$2,000–$4,000	544	76
$4,000 and over	151	68
Total and average*	3,213	77

* Six families did not state their income.

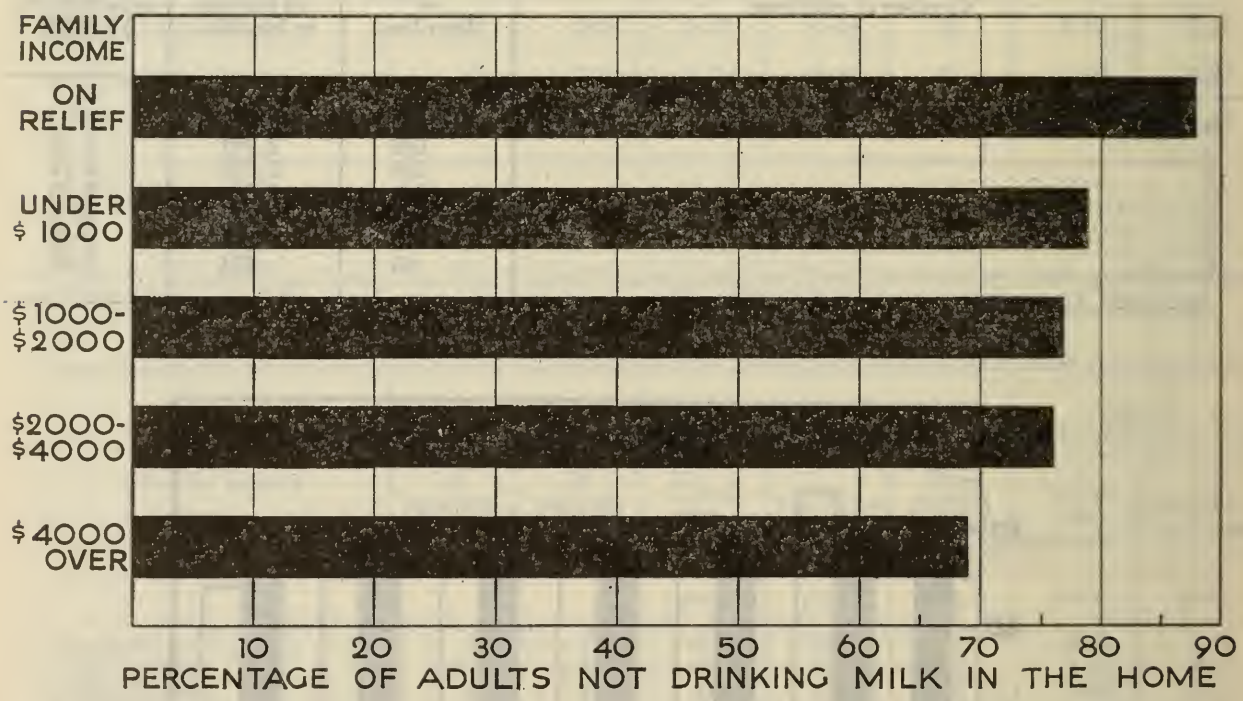

FIG. 7.—Percentage of adults not drinking milk in the home, in certain localities of Canada—1935.

Children.—The next three tables show the proportion of children who did not drink milk and the proportion of those who drank beverages other than milk in the three cities, the three villages and the five rural areas in which the study was conducted. With an increase in family income, there was a decrease in the number of children not drinking milk (Table 21). For example, 33 per cent of the children in families on relief in all three cities did not have any milk to drink. In families with incomes below $1,000, 29 per cent of the children did not drink milk. With family incomes of $1,000 to $2,000, 17 per cent of the children did not drink milk, but the percentage of children without milk dropped to 6 in families with incomes of $4,000 or more. Except in the city of Oshawa, there was a greater proportion of girls than boys not drinking

milk. The city of Calgary showed a smaller number of children not drinking milk than the other two cities. In most cases, there was an increase in the proportion of children not drinking milk as the age of the children increased.

The proportion of children within various age groups who did not drink milk in the three villages and the five rural areas is shown in Table 22. With the increase in age, there was in every locality an increase in the proportion of children not drinking milk. The proportion of children not drinking milk was much higher in the villages than in the rural areas. It was also much higher in the rural non-cheese producing areas than in the rural cheese producing areas.

TABLE 21.—RELATION BETWEEN FAMILY INCOME AND NON-CONSUMPTION OF MILK AS A BEVERAGE BY 3,939 CHILDREN OF VARIOUS AGE GROUPS IN 2,602 FAMILIES IN THE CITIES OF OSHAWA, QUEBEC AND CALGARY, 1935

Family income	Total children	Percentage of children not drinking milk								
		Boys			Total for boys	Girls			Total for girls	Total for all children
		Under 6 years	6–12 years	13–16 years		Under 6 years	6–12 years	13–16 years		
		%	%	%	%	%	%	%	%	%
City of Oshawa—										
On relief	72	20	15	33	21	8	25	13	15	18
Under $1,000	458	17	27	47	27	11	31	44	27	27
$1,000–$2,000	397	12	25	24	19	5	21	30	17	18
$2,000–$4,000*	100	11	14	17	14	6	35	11	20	16
Total	1,027	14	23	34	22	7	26	34	21	21
City of Quebec—										
On relief	142	22	42	91	41	32	50	69	44	43
Under $1,000	631	15	38	48	31	17	44	52	34	32
$1,000–$2,000	611	8	23	20	16	10	28	34	24	20
$2,000–$4,000	280	2	3	23	6	6	9	40	14	9
$4,000 and over	151	10	6	5	7	7	10	15	11	8
Total	1,815	11	24	33	20	15	29	41	26	23
City of Calgary—										
On relief	125	19	38	42	32	36	34	18	30	31
Under $1,000	273	14	27	42	19	12	27	61	31	24
$1,000–$2,000	393	3	8	25	9	4	13	32	17	12
$2,000–$4,000†	229	6	8	20	10	—	11	19	10	10
Total	1,020	8	18	30	14	9	18	33	20	16
All three cities—										
On relief	339	21	33	56	33	28	38	34	33	33
Under $1,000	1,362	15	47	46	27	14	36	52	31	29
$1,000–$2,000	1,401	8	18	23	15	7	23	32	20	17
$2,000–$4,000	609	5	6	21	7	10	9	37	17	11
$4,000 and over	228	7	3	4	4	4	7	12	7	6
Total	3,939	11	23	32	19	11	23	37	31	21

* In the income group, $4,000 and over, there were 30 children all consuming milk.
† In the income group, $4,000 and over, there were 47 children all consuming milk.

TABLE 22.—NON-CONSUMPTION OF MILK AS A BEVERAGE BY CHILDREN IN VARIOUS AGE GROUPS IN 611 FAMILIES IN THREE VILLAGES AND FIVE RURAL AREAS IN THE PROVINCES OF QUEBEC, ONTARIO AND ALBERTA

Locality	Total children	Percentage of children not drinking milk								
		Boys			Total for boys	Girls			Total for girls	Total for all children
		Under 6 years	6–12 years	13–16 years		Under 6 years	6–12 years	13–16 years		
		%	%	%	%	%	%	%	%	%
Villages	313	15	30	53	30	13	33	46	29	29
Rural cheese areas	189	2	–	17	3	11	18	15	14	8
Rural non-cheese areas	352	23	26	33	27	19	38	35	31	29
Rural areas	643	13	15	25	16	14	25	28	21	19

The relation between family income and non-consumption of milk by children for all the localities studied is shown in Table 23. The figures show the same trend as those for the three cities in Table 21; that is, a higher income is associated with a smaller percentage of children not drinking milk (Figure 8).

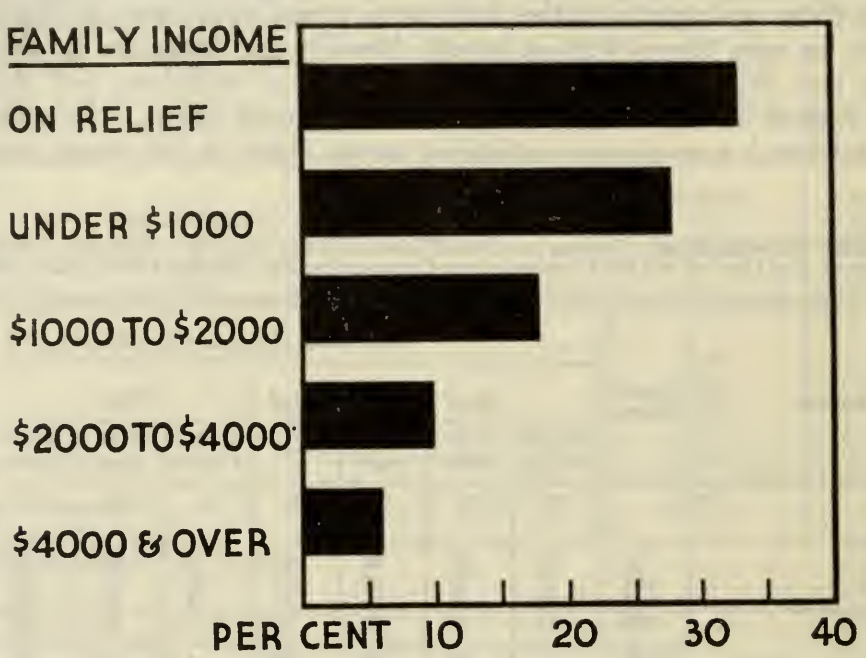

FIG. 8.—Percentage of children not drinking milk, according to family income, in certain localities of Canada—1935.

An increase in age was accompanied by a marked increase in the proportion of children not drinking milk (Figure 9).

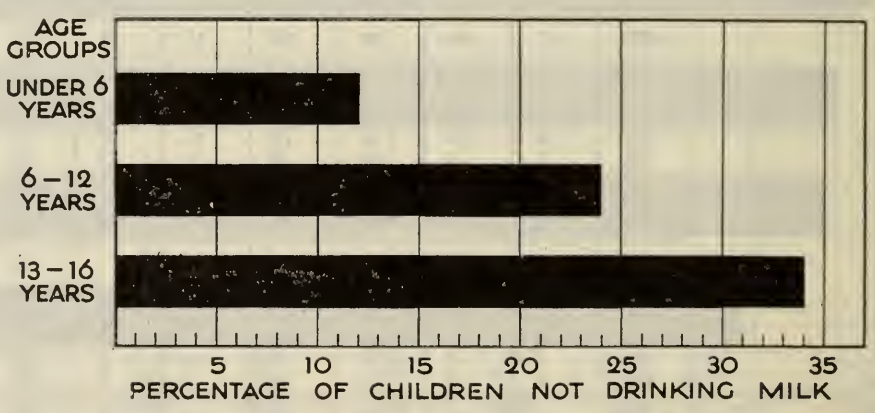

FIG. 9.—Percentage of children grouped according to age, not drinking milk in various localities of Canada—1935.

CONSUMPTION OF BEVERAGES OTHER THAN MILK BY CHILDREN

The consumption of beverages other than milk by children of various age groups is shown in Tables 24 to 26. These include tea, coffee, cocoa, chocolate preparations, " soft " drinks, etc. The tables have been arranged in the same way as the three preceding ones in order to make comparisons possible. The relation between family income and the consumption of beverages other than milk by children for the three cities is shown in Table 24. As age increased, there was a greater consumption of such beverages. There was a decrease in consumption of other beverages with an increase in family income. Of the children in families on relief in all three cities, 58 per cent drank beverages other than milk. In families with income of less than $1,000 a year, 53 per cent of the children used such beverages, while only 25 per cent of the children

in families with incomes of $2,000 or more used beverages other than milk. A slightly larger proportion of girls than boys drank these beverages. This does not hold true for the city of Oshawa, however, where the proportion was somewhat higher for boys than for girls.

There was a much larger proportion of children consuming beverages other than milk in villages than in rural areas (Table 25). The proportion of children consuming such beverages was also very much smaller in rural cheese producing areas than in rural non-cheese producing areas. There was also, in almost every case, a fairly direct relationship between age and the consumption of

TABLE 23.—RELATION BETWEEN FAMILY INCOME AND NON-CONSUMPTION OF MILK AS A BEVERAGE BY CHILDREN FROM 3,213 URBAN AND RURAL FAMILIES IN THE PROVINCES OF QUEBEC, ONTARIO AND ALBERTA, 1935

Locality	Total children	Percentage of children not drinking milk								
		Boys			Total for boys	Girls			Total for girls	Total for all children
		Under 6 years	6–12 years	13–16 years		Under 6 years	6–12 years	13–16 years		
		%	%	%	%	%	%	%	%	%
Relief	354	22	35	53	34	29	38	33	33	33
Under $1,000	1,965	14	30	44	27	16	36	47	30	28
$1,000–$2,000	1,655	9	18	25	16	7	23	34	21	18
$2,000–$4,000	674	4	6	21	8	4	15	25	13	10
$4,000 and over	239	7	3	4	4	4	7	11	7	6
Not stated	8	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	4,895	11	21	33	20	12	27	37	24	22

TABLE 24.—RELATION BETWEEN FAMILY INCOME AND CONSUMPTION OF BEVERAGES OTHER THAN MILK BY 3,939 CHILDREN BY AGE GROUPS IN 2,602 FAMILIES IN THE CITIES OF OSHAWA, QUEBEC AND CALGARY, 1935

Family income	Total children	Percentage of children drinking other beverages								
		Boys			Total for boys	Girls			Total for girls	Total for all children
		Under 6 years	6–12 years	13–16 years		Under 6 years	6–12 years	13–16 years		
		%	%	%	%	%	%	%	%	%
City of Oshawa—										
On relief	72	70	65	100	74	46	58	75	58	67
Under $1,000	458	51	62	63	58	45	57	66	55	57
$1,000–$2,000	397	23	49	51	36	29	42	43	32	34
$2,000 and over	130	14	16	33	19	13	32	44	26	22
Total	1,057	38	52	58	48	33	49	55	45	47
City of Quebec—										
On relief	142	31	38	73	41	43	55	77	53	47
Under $1,000	631	25	58	72	47	37	61	79	54	51
$1,000–$2,000	611	17	41	31	29	19	43	52	37	33
$2,000 and over	431	15	26	31	22	13	22	49	25	24
Total	1,815	21	43	47	35	28	43	62	42	38
City of Calgary—										
On relief	125	57	75	67	68	43	76	65	65	66
Under $1,000	273	30	57	67	49	34	68	73	58	53
$1,000–$2,000	393	24	47	33	40	43	43	58	49	50
$2,000 and over	276	30	27	23	26	19	28	38	29	28
Total	1,067	30	72	44	41	34	49	58	47	43
All three cities—										
On relief	339	46	60	78	58	44	65	71	58	58
Under $1,000	1,362	35	59	67	52	39	61	74	55	53
$1,000–$2,000	1,401	22	45	37	34	28	43	52	40	37
$2,000 and over	837	20	25	29	24	15	25	44	26	25
Total	3,939	28	52	49	40	31	46	59	44	42

beverages other than milk. There was also a larger proportion of girls than of boys drinking beverages other than milk in rural areas. The opposite was the case in villages.

TABLE 25.—RELATION BETWEEN FAMILY INCOME AND CONSUMPTION OF BEVERAGES OTHER THAN MILK BY 643 CHILDREN BY AGE GROUPS IN 611 FAMILIES IN THREE VILLAGES AND FIVE RURAL AREAS IN THE PROVINCES OF QUEBEC ONTARIO AND ALBERTA, 1935.

Locality	Total children	Percentage of children drinking other beverages								
		Boys			Total for boys	Girls			Total for girls	Total for all children
		Under 6 years	6–12 years	13–16 years		Under 6 years	6–12 years	13–16 years		
		%	%	%	%	%	%	%	%	%
Villages	313	25	41	56	39	23	45	31	34	37
Rural cheese areas	189	13	5	17	7	9	15	15	12	9
Rural non-cheese areas	352	8	23	19	17	10	20	33	19	18
Rural areas	643	14	18	25	18	13	25	35	21	20

TABLE 26.—RELATION BETWEEN FAMILY INCOME AND CONSUMPTION OF BEVERAGES OTHER THAN MILK IN 3,213 URBAN AND RURAL FAMILIES IN THE PROVINCES OF QUEBEC, ONTARIO AND ALBERTA, 1935

Family income	Total children	Percentage of children drinking milk other beverages								
		Boys			Total for boys	Girls			Total for girls	Total for all children
		Under 6 years	6–12 years	13–16 years		Under 6 years	6–12 years	13–16 years		
		%	%	%	%	%	%	%	%	%
On relief	354	47	60	74	58	45	67	70	59	59
Under $1,000	1,965	29	50	59	44	29	48	61	43	44
$1,000–$2,000	1,655	22	42	36	33	28	42	49	39	36
$2,000–$4,000	674	19	25	30	24	15	27	48	27	25
$4,000 and over	239	17	22	30	23	12	21	33	22	22
Not stated	8	.....	50	.....	33	100	33	100	60	50
Total	4,895	26	43	47	37	28	43	54	40	38

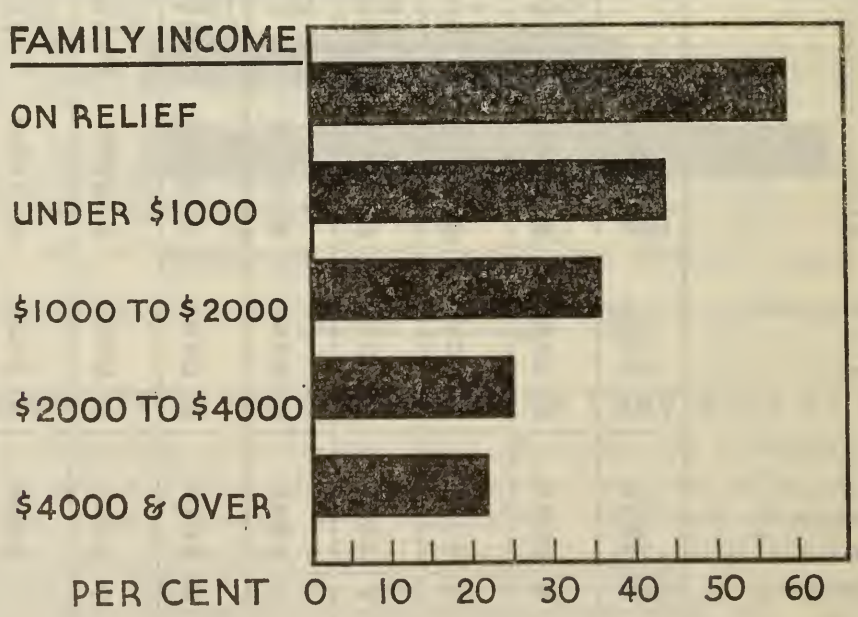

FIG. 10.—Percentage of children drinking beverages other than milk, according to family income, in certain localities of Canada—1935.

Table 26 shows that with an increase in age, a larger proportion of children drank beverages other than milk and with an increase in family income, a smaller proportion drank such beverages. (Figure 10.)

VARIATION IN THE AMOUNT OF MILK CONSUMED DURING THE YEAR

In order to ascertain whether there was a marked seasonal fluctuation in milk consumption, the families interviewed were asked whether their purchases varied during the year. When the answer was in the affirmative the housewife was asked the main reasons for such variation.

Of the 3,213 families visited, 2,752 did not report any important variation. Two hundred and seventy-six families reported a larger consumption of milk during the winter. Of these, 213 stated they did more cooking with milk in winter, and the other 63 reported that milk keeps better in winter. The 148 families who reported a larger consumption of milk in summer claimed that they liked it better as a beverage in that season.

Chapter II

CONSUMPTION OF CREAM

The consumption of cream as well as the consumption of almost any other food product may vary with the locality. It may not be the same in urban as in rural areas and it may also vary appreciably within rural areas and within urgan areas.

Locality.—A study of Table 27 shows that the combined consumption of cream of all types was higher in the farm areas visited, where it averaged about 0·36 of a pint per capita per week, than in villages and cities where it averaged 0·26 and 0·25 of a pint respectively.[1] The average was 0·28 of a pint for all localities. Similar differences were revealed when the data were studied on a per family instead of on a per capita basis.

All localities visited in Alberta showed a much higher average consumption of cream than localities visited in either Ontario or Quebec. In the city of Calgary, the consumption was 0·48 of a pint,[2] while in the two cities of Oshawa and Quebec, it was about one-third as much, being 0·17 and 0·14 of a pint respectively. The difference was still greater with the villages. The weekly per capita consumption was 0·49 of a pint in Claresholm and only 0·09 of a pint in Uxbridge and 0·11 of a pint in St. Romuald.

The farm areas showed great variations in the rates of cream consumption. The two non-cheese-producing farm areas had a larger consumption than the

Table 27.—Weekly Consumption of Cream in Certain Localities of Canada, 1935

Locality	Number of families	Number of persons	Per capita and per family consumption per week.							
			Whipping cream		Table cream		Cereal cream		Total cream	
			Per capita	Per family	Per capita	Per family	Per capita	Per family	Per capita	Per family
			pints	pints	pints	pints	pints	pints	pints	pints
Cities—										
Oshawa	816	3,365	·05	·20	·06	·26	·04	·15	·17	·71
Quebec city	790	4,686	·06	·33	·07	·39	.....	·01	·14	·84
Calgary	996	3,994	·11	·46	·14	·58	·21	·84	·48	1·94
Totals or averages for cities	2,602	12,045	·07	·34	·09	·42	·08	·38	·26	1·22
Villages—										
Uxbridge	102	345	·06	·22	·01	·02	.....	.....	·09	·32
St. Romuald	48	287	·07	·41	·03	·18	.....	.....	·11	·65
Claresholm	101	432	·24	1·05	·24	1·03	.....	.....	·49	2·10
Totals or averages for villages	251	1,064	·14	·59	·11	·46	.....	.....	·25	1·09
Farm Areas—										
Ontario rural cheese producing area	50	221	·17	·77	·08	·37	·08	·35	·38	1·66
Ontario rural non-cheese producing area	52	236	·13	·59	·18	·81	·07	·31	·52	2·37
Quebec rural cheese producing area	49	361	·04	·32	·04	·29	.....	.....	·08	·62
Quebec rural non-cheese producing area	108	772	·13	·94	·03	·18	.....	.....	·17	1·23
Alberta rural area	101	409	·01	·03	·85	3·41	.....	.....	·86	3·48
Totals or averages for farm areas	360	1,999	·09	·52	·22	1·22	·02	·09	·36	2·00
Grand totals and averages	3,213	15,108	·08	·38	·11	·51	·07	·32	·28	1·30

[1] In the study in Sydney-Glace Bay district of Nova Scotia, referred to in the introduction, the average weekly consumption of cream per person was 0·28 pint for the 562 families reporting. Sydney averaged 0·33 pint, Glace Bay-New Waterford 0·24 pint and Sydney Mines-North Sydney 0·24 pint.

[2] The Board of Public Utility Commissioners which obtains information on actual sales of milk and cream by licensed distributors in various cities in Alberta, indicate that the per capita consumption of cream in Calgary in 1935 was between 15 and 20 per cent lower than that shown by this survey. It is possible housewives on the average overestimated their consumption, but it is expected that housewives in other places also overestimated their purchases to a similar degree.

two cheese-producing areas and the Alberta farm area showed the highest consumption of all the farm areas. The Quebec cheese-producing farm area had quite a low consumption of cream with a weekly per capita consumption of only 0·08 of a pint and a weekly per family consumption of 0·62 of a pint.

Whipping Cream.—The average consumption of whipping cream when figures for the three villages were combined, was higher than the averages for the farm areas or for the cities. The Alberta farm area showed a very low consumption of whipping cream, the figures for per capita and per family consumption being 0·01 and 0·03 of a pint per week respectively, compared with an average of 0·09 and 0·52 of a pint per week for all farm areas.

Table Cream.—The consumption of table cream was higher on the average in the farm areas than in the other areas. The per capita and the per family consumption figures were 0·22 and 1·22 pints per week respectively, compared with an average of 0·11 and 0·51 pint per week for all localities. The figures for the consumption of table cream show also that the average for the three villages was lower than that for the three cities. The fact that the consumption of table cream was much higher in Claresholm than in the other two villages raises the village average.

Cereal Cream.—The consumption of cereal cream was almost a negligible factor in every locality but Oshawa, Calgary and the two Ontario farm areas. In Calgary, it was higher than the consumption of either whipping or table cream.

Family Income.—There was a direct relationship between consumption of cream and family income (Table 28 and Figure 11). Consumption of cream

TABLE 28.—WEEKLY CONSUMPTION OF CREAM AS RELATED TO FAMILY INCOME, 3,213 FAMILIES IN THE PROVINCES OF ONTARIO, QUEBEC AND ALBERTA, 1935

Family income	Number of families	Number of persons	Per capita and per family consumption per week.							
			Whipping cream		Table cream		Cereal cream		Total cream	
			Per capita	Per family	Per capita	Per family	Per capita	Per family	Per capita	Per family
			pints	pints	pints	pints	pints	pints	pints	pints
On relief	189	921	·01	·07	·02	·08	·02	·12	·07	·36
Under $1,000	1,263	5,868	·05	·22	·09	·43	·03	·16	·20	·91
$1,000 – $2,000	1,060	4,978	·08	·38	·11	·52	·08	·32	·28	1·33
$2,000 – $4,000	544	2,486	·14	·64	·17	·77	·13	·60	·45	2·08
$4,000 and over	151	826	·21	1·17	·15	·79	·08	·44	·47	2·58
Total	3,213	15,108	·08	·38	·11	·51	·07	·32	·28	1·30

* Six families did not state their income.

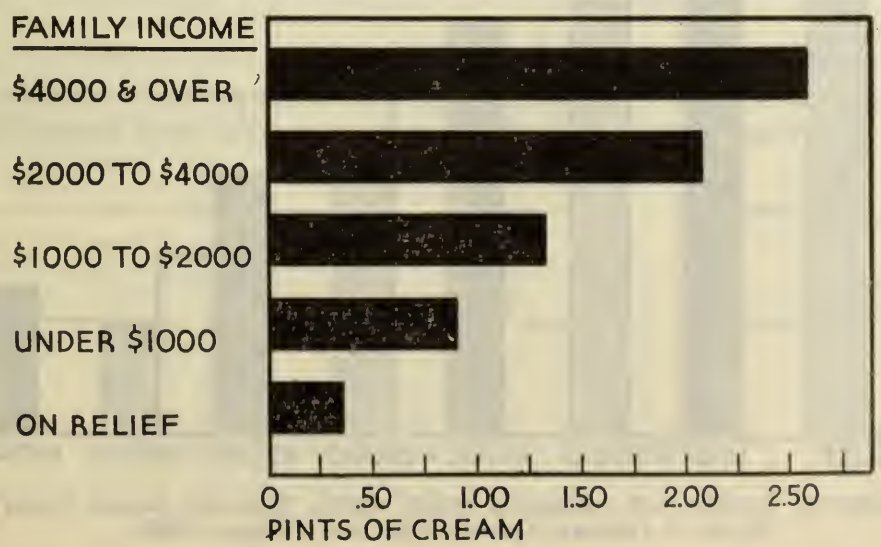

FIG. 11.—Relation of consumption of cream per capita per week to family income, in certain localities of Canada—1935.

by people on relief was exceedingly low. It was only 0·07 of a pint per capita and 0·36 of a pint per family per week. This compares with a weekly consumption of 0·47 of a pint per capita and 2·58 pints per family for families with an annual income of over $4,000. The increase in the rate of consumption with the increase in family income was quite sharp for all income groups under $4,000. When this income group was reached, however, the maximum rate of consumption seemed also to have been reached. The highest income group was the only one showing a larger consumption of whipping than table cream. The consumption of cereal cream for this income group, however, was lower than the one for the preceding income group ($2,000-$4,000).

There was an inverse relationship between income and the proportion of families not consuming cream. There was a range of 58 per cent between the proportion of families on relief not consuming cream and the proportion of families with an income of over $4,000 not consuming cream. The proportion of families of all income levels not consuming cream was 37 per cent (Table 29 and Figure 12).

In all three cities there was an inverse relationship between family income and the proportion of families not consuming cream. It was found that 40 per cent of the Oshawa families and 42 per cent of the Quebec families did not

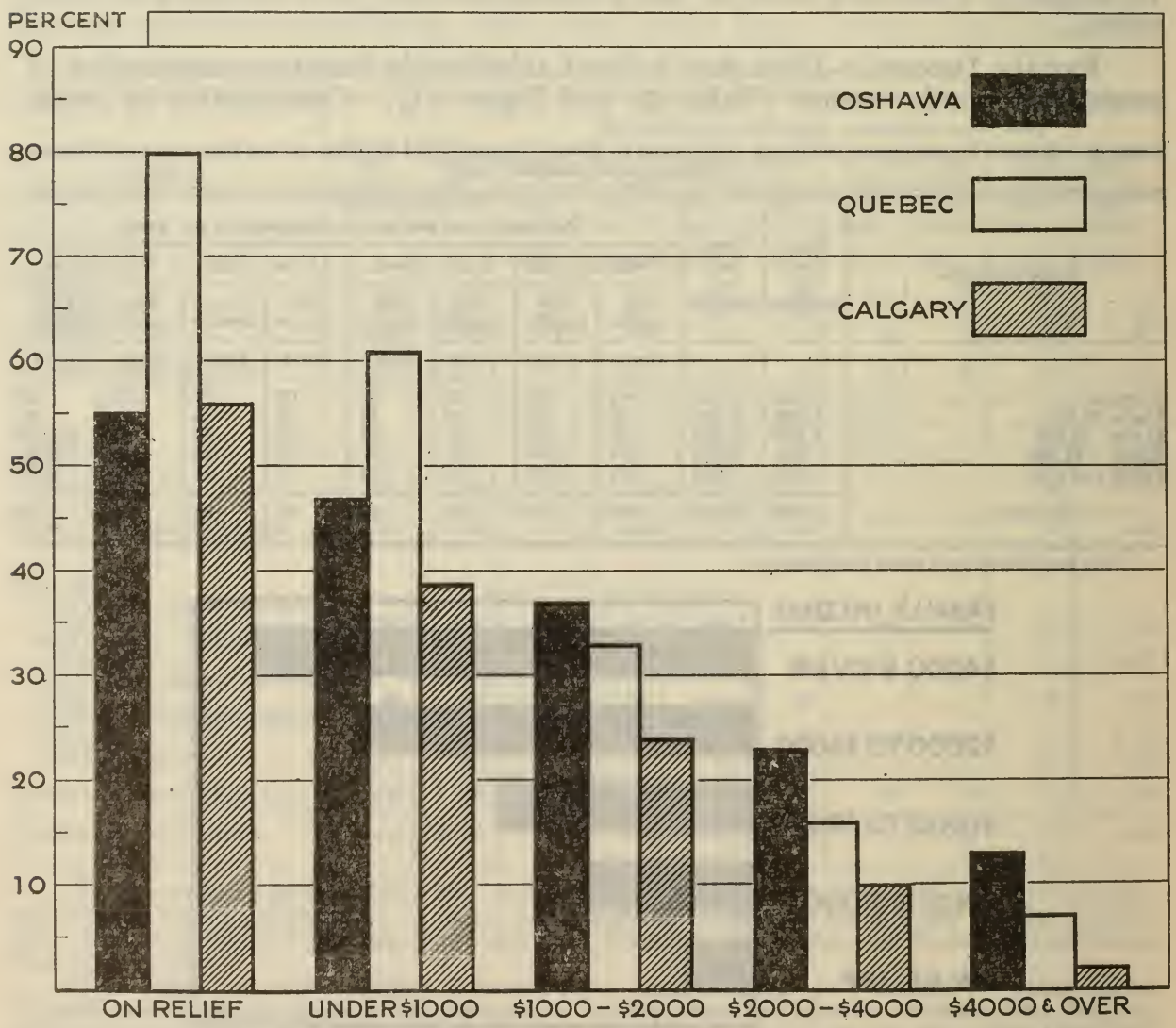

FIG. 12.—Number of families not consuming cream within different income levels in the three Cities of Oshawa, Quebec City and Calgary—1935.

TABLE 29.—NUMBER OF FAMILIES NOT CONSUMING CREAM WITHIN DIFFERENT INCOME LEVELS IN VARIOUS LOCALITIES OF CANADA, 1935

Family income	Number of families	Actual number of families not consuming cream	Proportion of families not consuming cream
			%
On Relief	189	123	65
Under $1,000	1,263	635	50
$1,000 to $2,000	1,060	330	31
$2,000 to $4,000	544	87	16
$4,000 and over	151	10	7
Totals and averages	3,213*	1,188	37

* Six families did not state their income.

consume any cream. The city of Calgary fared better with a proportion of only 26 per cent of the families visited reporting no consumption of cream (Table 30).

It will be noticed that the figures for the total consumption of cream are a little higher than would be obtained by adding those for whipping, table and cereal cream. This is due to the fact that some housewives could give reliable figures only for the total consumption of cream and the enumerators were therefore unable to classify all cream as to whipping, table and cereal.

The butterfat content of different types of cream in the cities visited was about as quoted below.

Cities	Types of cream		
	Cereal cream	Table cream	Whipping cream
	%	%	%
Oshawa—			
(5 dairies)	8	28	38
(1 dairy)	8	24	32–34
Quebec	20	20	35
Calgary	10	20	32

These figures were supplied by the managers of the six dairies in Oshawa and were obtained from official sources in Quebec and Calgary.

Chapter III

CONSUMPTION OF EVAPORATED MILK, CONDENSED MILK AND BUTTERMILK

The consumption of evaporated milk, condensed milk and buttermilk varied quite widely from one locality to another. (Table 31).

Evaporated Milk.—There was quite a disparity in the figures on consumption of evaporated milk for the three cities. Calgary had the largest consumption with an average of ·059 lb. per capita per week, Oshawa came next with ·034 and Quebec City last with ·004 lb. per capita per week.

The use of evaporated milk in the farm areas was negligible with the exception of the Alberta area, which had an average weekly per capita consumption of ·037 lb.

The average weekly per capita consumption of evaporated milk was ·026 lb. for all localities, ·030 lb. for cities, ·012 lb. for villages and ·008 lb. for the farm areas.

Condensed Milk.—There was almost as much disparity in the figures on consumption of condensed milk for the three cities as there was in the figures on consumption of evaporated milk. Oshawa showed an average weekly per capita consumption of condensed milk of ·024 lb. This was the highest average of all three cities. Figures for Calgary and Quebec City were ·014 and ·007 lb. respectively. The average for all three cities was ·014 lb. per capita per week.

The consumption of condensed milk was higher in the cities than in the other localities. The average weekly per capita consumption of milk was ·007 lb. in the villages and ·006 lb. in the farm areas. The average for all localities was ·012 lb.

Table 31.—Weekly Consumption of Evaporated Milk, Condensed Milk and Buttermilk in Certain Localities of Canada, 1935

Locality	Number of families	Number of persons	Per capita and per family consumption per week					
			Evaporated milk		Condensed milk		Buttermilk	
			Per capita	Per family	Per capita	Per family	Per capita	Per family
			lbs.	lbs.	lbs.	lbs.	qts.	qts.
Cities—								
Oshawa	816	3,365	·034	·139	·024	·101	·146	·602
Quebec city	790	4,686	·004	·021	·007	·040	.....	.....
Calgary	996	3,994	·059	·235	·014	·055	·152	·611
Totals or averages for cities	2,602	12,045	·030	·140	·014	·065	·091	·423
Totals or averages for villages	251	1,064	·012	·050	·007	·030	·116	·490
Totals or averages for the 2 cheese-producing farm areas in Ontario and Quebec	99	582	.....	.....	·012	·072	.....	.....
Totals or averages for the 2 non-cheese-producing farm areas in Ontario and Quebec	160	1,008	.....	.....	·002	·009	.....	.....
Totals or averages for the Alberta farm area	101	407	·037	·150	·009	·047	·001	·005
Totals or averages for all farm areas	360	1,997	·008	·042	·006	·034	·001	·003
Grand totals or averages	3,213	15,108	·026	·123	·012	·059	·081	·381

TABLE 30.—NUMBER OF FAMILIES NOT CONSUMING CREAM WITHIN DIFFERENT INCOME LEVELS IN THE THREE CITIES OF OSHAWA, QUEBEC CITY AND CALGARY, 1935

Family income	City of Oshawa			City of Quebec			City of Calgary			All three cities		
	Number of families	Actual number of families not consuming cream	Proportion of families not consuming cream	Number of families	Actual number of families not consuming cream	Proportion of families not consuming cream	Number of families	Actual number of families not consuming cream	Proportion of families not consuming cream	Number of families	Actual number of families not consuming cream	Proportion of families not consuming cream
			%			%			%			%
On relief	53	29	55	60	48	80	67	38	57	180	115	64
Under $1,000	328	155	47	286	175	61	272	106	39	886	436	49
$1,000 to $2,000	300	111	37	245	82	33	343	83	24	888	276	31
$2,000 to $4,000	104	24	23	140	23	16	259	27	10	503	74	15
$4,000 and over	31	4	13	58	4	7	54	1	2	143	9	6
Totals and averages	816	323	40	790*	332	42	996*	256	26	2,602	912	35

* One family did not state its income.

Buttermilk.—Practically no buttermilk was consumed in the city of Quebec. In the cities of Oshawa and Calgary, average consumption was 0·146 quart and 0·152 quart per capita per week respectively. Due to the much lower consumption in the city of Quebec, the average weekly capita consumption for the three cities was only 0·091 quart.

For the villages, the average weekly per capita consumption was 0·16 quart and for the farm areas, it was only 0·001 quart. The average weekly per capita consumption for all localities was 0·081 quart.

Family Income.—The relation between weekly consumption of evaporated milk, condensed milk, buttermilk and family income in the three cities of Oshawa, Quebec and Calgary is shown in Table 32.

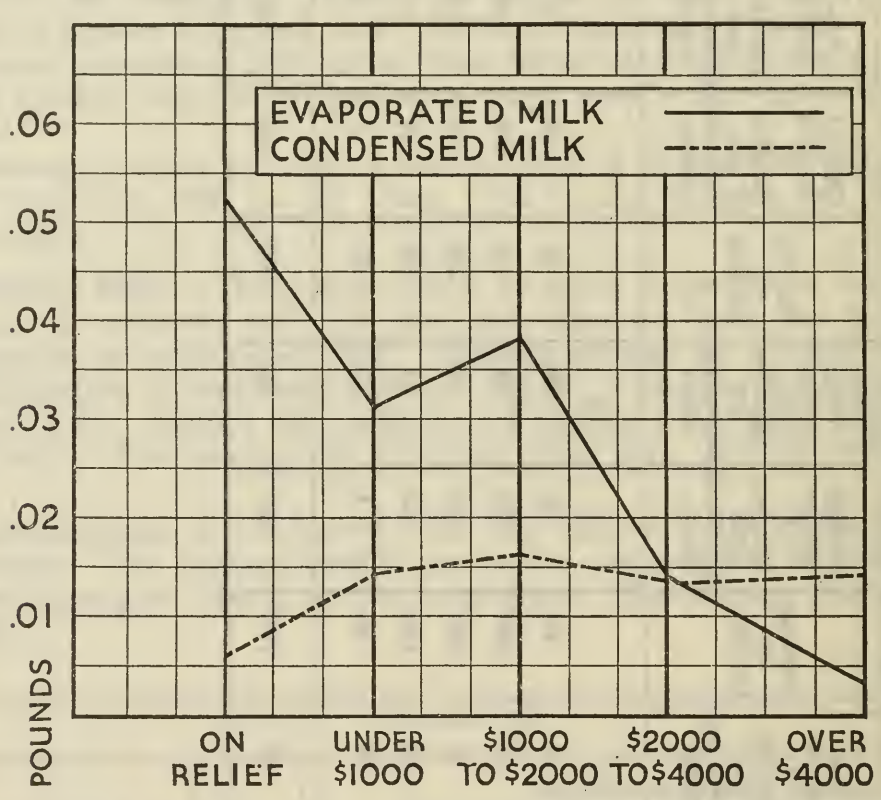

Fig. 13.—Relation of consumption of evaporated milk and condensed milk per capita per week to family income, in certain localities of Canada—1935.

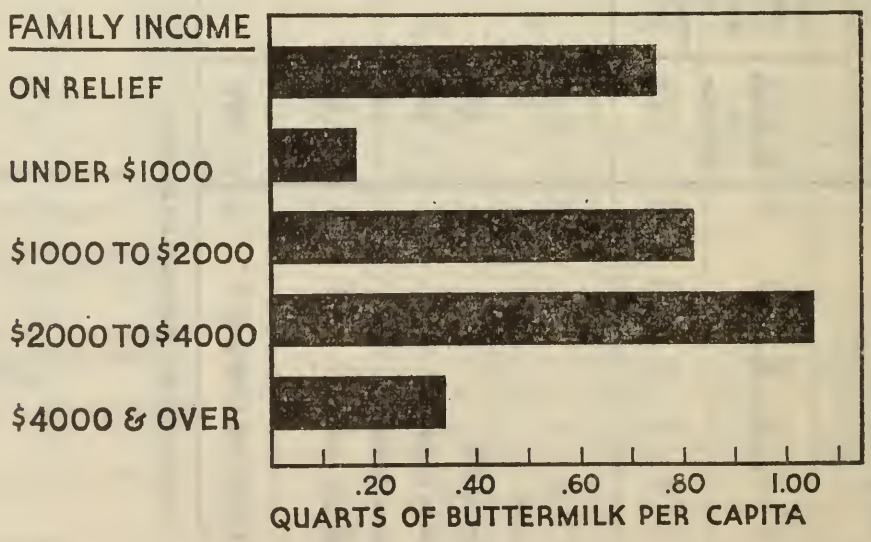

Fig. 14.—Relation of consumption of buttermilk per capita per week to family income, in certain localities of Canada—1935.

Families with incomes above $2,000 a year consumed, on the average, less evaporated milk than families with lower annual incomes.

The average consumption of condensed milk was 0·014 pound per capita per week. There was very little variation in consumption between income groups, except in the relief group, for which the weekly per capita consumption was only 0·006 pound. The per capita consumption of buttermilk was highest in families with annual incomes of $2,000 to $4,000; it was lowest in families with an income of less than $1,000 a year, and second lowest in families in the highest income group of $4,000 a year or more (Figures 13 and 14).

TABLE 32.—WEEKLY CONSUMPTION OF EVAPORATED MILK, CONDENSED MILK AND BUTTERMILK AS RELATED TO FAMILY INCOME, 2,602 FAMILIES IN THE THREE CITIES OF OSHAWA, CALGARY AND QUEBEC, 1935

Family income	Number of families	Number of persons	Per capita and per family consumption per week					
			Evaporated milk		Condensed milk		Buttermilk	
			Per capita	Per family	Per capita	Per family	Per capita	Per family
			lbs.	lbs.	lbs.	lbs.	qts.	qts.
On relief	180	882	·052	·256	·006	·031	·075	·368
Under $1,000	886	3,990	·031	·142	·014	·062	·017	·480
$1,000 to $2,000	888	4,098	·038	·177	·016	·076	·082	·380
$2,000 to $4,000	503	2,282	·014	·065	·013	·059	·107	·485
$4,000 and over	143	784	·003	·014	·014	·076	·034	·189
Total or average	*2,602	12,045	·030	·140	·014	·065	·091	·423

* 2 families did not state their income.

Chapter IV

CONSUMPTION OF BEVERAGES OTHER THAN MILK BY CHILDREN

In tables 33 to 39, cocoa has been grouped with all other kinds of drinks in the preparation of which a certain quantity of milk is used, excluding tea and coffee. These include the many preparations which are so frequently used, such as malt, barley, etc., and are sold under numerous trade names. In the text these beverages are referred to as " cocoa and other milk beverages."

Cocoa and other Milk Products.—Table 33 shows the percentage of children within various age groups drinking cocoa and other milk beverages in various urban and rural districts in the provinces of Ontario, Quebec and Alberta. The general tendency was for the consumption of these products to increase somewhat after the children had reached the age of 6 years and to decrease after they had reached the age of 13 years. It is also noticed that there was some relationship between the consumption of these beverages and the annual family income. With a higher family income, the consumption was lower.

Table 33.—Percentage of Children of Different Ages and in Families with Different Incomes Drinking Cocoa and Drinks Prepared Wholly or Partially with Milk in Various Urban and Rural Districts in the Provinces of Ontario, Quebec and Alberta, 1935

Age groups	Family income					
	On relief	Under $1,000	$1,000-$2,000	$2,000-$4,000	$4,000 and over	All income groups
	%	%	%	%	%	%
Boys—						
Under 6 years	23·4	12·7	11·6	9·6	13·3	12·6
6 - 12 years	26·5	15·8	16·5	13·3	3·2	15·7
13 - 16 years	17·6	12·3	14·5	10·4	7·4	12·9
Total or average for boys	23·8	14·0	14·1	11·4	6·7	14·0
Girls—						
Under 6 years	19·7	11·3	14·4	8·3	3·8	12·2
6 - 12 years	28·8	8·3	18·8	16·3	4·9	14·1
13 - 16 years	27·5	11·1	13·5	14·1	7·4	13·4
Total or average for girls	25·0	10·1	16·1	12·9	5·3	13·3
Total or average for all children	24·4	12·1	15·0	12·1	6·0	13·6

Tea.—The percentage of children drinking tea in various urban and rural districts in the provinces of Ontario, Quebec and Alberta tended to increase with an increase in age (Table 34). In the proportion of boys drinking tea, there was a range of 6·4 per cent between the youngest and the oldest age groups. There was a range of 7·1 per cent in the proportion of girls drinking tea between the youngest and the oldest age groups. On the other hand, there was a decrease in the proportion of children drinking tea with an increase in family income.

Tea and Coffee. —The percentage of all children drinking tea and coffee in families in various urban and rural districts in the provinces of Ontario, Quebec and Alberta was 8·5 (Table 35). There was an increase in the proportion of

children drinking tea and coffee with an increase in family income (Table 35). This table does not show the number of children who drank tea added to the number of children who drank coffee, but only the number of children who drank both tea and coffee.

TABLE 34.—PERCENTAGE OF CHILDREN DRINKING TEA IN VARIOUS DISTRICTS IN THE PROVINCES OF ONTARIO, QUEBEC AND ALBERTA, AS RELATED TO AGE AND TO FAMILY INCOME, 1935

Age groups	Family income					
	On relief	Under $1,000	$1,000-$2,000	$2,000-$4,000	$4,000 and over	All income groups
	%	%	%	%	%	%
Boys—						
Under 6 years	9·4	5·4	1·2	1·5	.....	3·4
6 - 12 years	9·6	9·6	6·3	3·0	.....	7·0
13 - 16 years	17·6	13·8	7·2	4·5	.....	9·8
Total or average for boys	11·0	8·8	4·4	2·7	.....	6·2
Girls—						
Under 6 years	6·1	6·4	3·1	2·8	.....	4·7
6 - 12 years	7·6	11·5	8·3	2·3	1·6	8·2
13 - 16 years	17·5	16·6	9·6	4·2	3·7	11·8
Total or average for girls	9·3	10·5	6·8	2·9	1·8	7·7
Total or average for all children	10·2	9·6	5·5	2·8	0·9	6·9

TABLE 35.—PERCENTAGE OF CHILDREN WITHIN VARIOUS AGE GROUPS AND IN DIFFERENT FAMILY INCOME GROUPS DRINKING TEA AND COFFEE IN VARIOUS RURAL AND URBAN DISTRICTS IN THE PROVINCES OF ONTARIO, QUEBEC AND ALBERTA, 1935

Age groups	Family income					
	On relief	Under $1,000	$1,000-$2,000	$2,000-$4,000	$4,000 and over	All income groups
	%	%	%	%	%	%
Boys—						
Under 6 years	9·4	4·1	2·6	0·7	.....	3·3
6 - 12 years	10·8	13·4	7·7	4·8	.....	9·3
13 - 16 years	14·7	20·5	6·6	11·9	7·4	13·5
Total or average for boys	11·0	11·3	5·4	4·6	1·7	7·9
Girls—						
Under 6 years	16·7	7·2	3·5	.....	.....	5·6
6 - 12 years	18·2	13·1	8·3	2·3	.....	9·5
13 - 16 years	12·5	20·0	11·2	15·5	.....	14·5
Total or average for girls	16·3	12·0	7·4	4·5	.....	9·2
Total or average for all children	13·6	11·6	6·3	4·6	0·9	8·5

Non-milk Beverages.—Table 36 shows the percentage of children drinking beverages other than milk, cocoa and other milk beverages and tea and coffee in rural and urban families in the three provinces of Ontario, Quebec and Alberta. There were a number of other beverages used, but it was not considered necessary to study them separately. The general tendency was for the

number of children drinking these "non-milk beverages" to increase as their ages increased. A somewhat larger proportion of the children in families with incomes of $4,000 or over drank these beverages than in families with smaller incomes. Included among the beverages were ginger ale and drinks of similar type.

TABLE 36.—PERCENTAGE OF CHILDREN DRINKING BEVERAGES OTHER THAN MILK, COCOA AND OTHER MILK BEVERAGES, TEA AND COFFEE IN FAMILIES IN VARIOUS RURAL AND URBAN DISTRICTS IN THE PROVINCES OF ONTARIO, QUEBEC AND ALBERTA, 1935

Age groups	Family income					
	On relief	Under $1,000	$1,000-$2,000	$2,000-$4,000	$4,000 and over	All income groups
	%	%	%	%	%	%
Boys—						
Under 6 years	4·7	7·5	6·6	8·6	3·3	6·7
6 – 12 years	6·0	9·2	9·1	6·1	17·5	8·9
13 – 16 years	11·8	8·2	8·4	9·0	14·8	9·0
Average for boys	6·6	8·3	8·0	7·3	13·3	8·1
Girls—						
Under 6 years	3·0	2·6	5·8	2·8	7·7	3·8
6 – 12 years	9·1	10·7	8·6	7·8	14·8	9·7
13 – 16 years	7·5	11·1	11·8	14·1	22·2	11·6
Average for girls	6·4	7·5	8·4	7·4	14·9	8·0
Average for all children	6·5	7·9	8·2	7·4	14·1	8·0

Cocoa and Milk Beverages. Oshawa.—In the city of Oshawa there was a tendency for the proportion of children drinking cocoa and other milk beverages to decrease with an increase in annual family income, as seen in Table 37. This

TABLE 37.—PERCENTAGE OF CHILDREN OF DIFFERENT AGES AND IN FAMILIES WITH DIFFERENT INCOMES DRINKING COCOA AND DRINKS PREPARED WHOLLY OR PARTIALLY WITH MILK IN THE CITY OF OSHAWA, 1935

Age groups	Family income				
	On Relief	Under $1,000	$1,000-$2,000	$2,000-$4,000	All income Groups
	%	%	%	%	%
Boys—					
Under 6 years	50·0	31·8	12·1	.....	20·9
6 – 12 years	15·0	31·3	24·1	16·1	25·6
13 – 16 years	11·1	21·6	29·7	26·7	24·1
Total or average for boys	23·1	29·5	20·0	13·2	23·5
Girls—					
Under 6 years	38·5	33·3	19·2	8·7	24·6
6 – 12 years	8·3	29·7	21·1	16·0	23·5
13 – 16 years	25·0	29·3	12·5	11·1	20·4
Total or average for girls	24·2	30·8	18·5	12·2	23·2
Total or average for all children	23·6	30·1	19·2	12·8	23·4

table also shows that there was not much difference in the proportion of children of different ages consuming these beverages. Next to milk, cocoa and drinks prepared wholly or partially with milk are those which were consumed by the largest number of children in the city of Oshawa.

The proportion of all children in the families studied in Oshawa consuming these beverages was 23·4 per cent, as compared with 13·6 per cent for families in all localities included in the study in the provinces of Ontario, Quebec and Alberta.

Tea. Quebec.—The percentage of children drinking tea in the families studied in the city of Quebec was 13·3 per cent (Table 38). There was an increase in the consumption of tea with an increase in age, and a decrease in the consumption of the same beverage with an increase in income. Whereas, with the exception of milk, there was a greater proportion of children drinking cocoa and other milk beverages than anything else in the cities of Oshawa and Calgary, there was a greater proportion of children drinking tea than any other beverage except milk in the city of Quebec.

TABLE 38.—PERCENTAGE OF CHILDREN OF DIFFERENT AGES AND IN FAMILIES WITH DIFFERENT INCOMES DRINKING TEA IN THE CITY OF QUEBEC, 1935

Age groups	Family income				
	On Relief	Under $1,000	$1,000-$2,000	$2,000-$4,000	All income Groups
	%	%	%	%	%
Boys—					
Under 6 years	18·8	13·8	1·6	3·2	7·5
6 – 12 years	23·1	23·6	12·7	4·1	14·6
13 – 16 years	54·5	26·0	11·1	3·8	16·3
Average for boys	26·1	20·2	7·8	3·7	12·1
Girls—					
Under 6 years	10·8	15·4	6·1	6·3	10·1
6 – 12 years	18·2	25·2	13·8	.....	14·2
13 – 16 years	53·8	31·8	20·3	8·0	23·4
Average for girls	20·8	22·4	12·6	4·0	14·6
Average for all children	23·4	21·3	10·2	3·8	13·3

Cocoa and Milk Beverages. Calgary.—The proportion of children drinking cocoa and other milk beverages in the city of Calgary was 26·8 per cent as compared to 23·4 per cent for the city of Oshawa (Table 39). The proportion of children in the relief group drinking such beverages was as high as 48 per cent. In the other income groups, there did not seem to be much relation between consumption and family income. Neither did there seem to be much, if any, relation between age of children and consumption of these beverages. Next to milk, cocoa and drinks prepared wholly or partially with milk are those which were consumed by the largest number of children in the city of Calgary.

TABLE 39.—PERCENTAGE OF CHILDREN OF DIFFERENT AGES AND IN FAMILIES WITH DIFFERENT INCOMES DRINKING COCOA AND DRINKS PREPARED WHOLLY OR PARTIALLY WITH MILK IN THE CITY OF CALGARY, 1935

Age groups	Family income				
	On Relief	Under $1,000	$1,000-$2,000	$2,000-$4,000	All income Groups
	%	%	%	%	%
Boys—					
Under 6 years	42·9	22·8	23·6	19·1	23·6
6 – 12 years	50·0	22·0	33·7	26·4	30·8
13 – 16 years	41·7	13·9	17·5	4·0	15·3
Average for boys	46·2	22·4	27·0	19·2	25·2
Girls—					
Under 6 years	42·9	22·0	39·1	18·8	28·5
6 – 12 years	51·7	27·3	36·7	15·2	29·3
13 – 16 years	52·9	12·1	34·0	26·9	28·9
Average for girls	50·0	21·2	36·5	19·2	28·9
Average for all children	48·0	21·9	30·9	19·2	26·8

APPENDIX

Questionnaire Used by Enumerators

1. Record No.....Date.....Enumerator.....

2. City, Town or P.O.....Street.....Province.....

3. Number of adults (over 16 years of age) in family.....

4. Number of children.....

5. How much milk is used daily in the home.....qts.

6. How much is used as a beverage.....qts. In cooking.....qts.

7. How much does each adult drink—Women.....pts. Men.....pts.

8. How much does each child drink.....
   Boys—under 6 years ( ).....pts. 6-12 yrs. ( ).....pts.
   13-16 years ( ).....pts.
   Girls—under 6 years ( ).....pts. 6-12 yrs. ( ).....pts.
   13-16 years ( ).....pts.

9. Do any of the children not drink milk—Yes.....No.....If there are, state number of children.....
   Boys—under 6 years.....6-12 yrs.....13-16 yrs.....
   Girls—under 6 years.....6-12 yrs.....13-16 yrs.....

10. Do the children drink any other beverages—Yes.....No.....
    If they do, name the beverage:
    Boys—under 6 yrs.....6-12 yrs.....13-16 yrs.....
    Girls—under 6 yrs.....6-12 yrs.....13-16 yrs.....

11. Does the amount of milk used vary according to season—Yes.....
    No.....If so, why?.....
    .....

12. How much is used per week of evaporated milk.....pounds. Condensed milk.....
    pounds. Milk powder.....pounds. Buttermilk.....qts.

13. How much cream is used per week.....Whipping cream.....
    Table cream.....Cereal cream.....

SUMMARY

The per capita consumption of milk in more than two-thirds of the families were in cities, 251 in villages and 360 in farm areas, was 0·74 pint per day. Of this amount 62 per cent (0·46 pint) was used as a beverage.

The daily per capita consumption of milk was higher in the farm areas than in the villages or cities where the survey was made. In the farm areas there was also a higher utilization of milk as a beverage.

An increase in family income was accompanied by an increase in daily per capita and per family consumption of milk. For the entire survey the per capita consumption of milk per day varied from 0·54 pint for families on relief to 0·95 pint for families with incomes of $4,000 a year or more.

Persons of British origin were amongst the highest per capita consumers of milk. The consumption of milk per family was highest amongst those of French Canadian origin, but the per capita consumption of milk by French Canadians was slightly less than the average for all nationalities.

The consumption of milk in the farm homes where information was obtained was above one pint per capita per day whereas the consumption of milk by the families of unskilled labourers was less than 0·6 pint per capita per day.

The per capita consumption of milk by 3,213 families of which 2,602 families varied from 0·41 to 1·00 pint.

The average per capita consumption of milk by persons consuming milk as a beverage was 1·27 pint per day. The per capita consumption by adults was slightly lower than the per capita consumption by children.

There was a smaller per capita consumption of milk in the larger families.

A large proportion of adults did not drink milk. With families on relief, as many as 88 per cent of the adults did not drink mik, while in families having a yearly income of over $4,000, 68 per cent did not drink milk.

Twenty-one per cent of the 3,939 children of 16 years and under in the families interviewed in the three cities drank no milk. The proportion of children not drinking milk fell from 33 per cent in families on relief to 6 per cent in families with incomes of $4,000 or more. Girls and boys of the ages of 13 to 16 years, of course, drank less milk than younger children.

In the families with small incomes, a larger proportion of children consumed beverages other than milk than those in families with large incomes.

An increase in age was also accompanied by a larger proportion of children drinking beverages other than milk.

As many as 2,752 of the 3,213 housewives interviewed did not report any important variation in the amount of milk consumed from season to season.

The weekly consumption of cream in the areas studied was 0·28 pint per capita and the rates of cream consumption were much lower for families with low incomes than for families with high incomes. No consumption of cream was reported in 65 per cent of families on relief, whereas only 7 per cent of the families with a yearly income of $4,000 and over did not report any consumption of cream.

The consumption of evaporated milk, condensed milk and buttermilk was lower in farm areas than in cities or villages.

Excluding milk, there was a larger proportion of children drinking cocoa and other drinks prepared wholly or partially with milk than of children drinkink any other kind of beverage.

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