Published by Authority of the Hon. James A. MacKINNON, M.P.,
Minister of Trade and Commerce

CANADA

DEPARTMENT OF TRADE AND COMMERCE

DOMINION BUREAU OF STATISTICS

BULLETIN NO. F-2

CULTURAL DIFFERENCES IN FAMILY SIZE

CANADA, 1941

OTTAWA
1945

Price 50 cents

Bulletin F-2.

CULTURAL DIFFERENCES IN FAMILY SIZE, CANADA, 1941

PREFACE

This bulletin continues the investigation of human fertility in Canada, and is supplementary to Bulletin F-1 "Trends in Canadian Family Size." Both bulletins are based upon statistics collected at the Decennial Census of 1941, when the following questions were asked of all women who, as at the date of the Census, either were or had been married: (a) age at first marriage; (b) number of children born alive to this mother; (c) number of these children living at the date of the Census.

This publication is based upon an intensive study of the women between the ages of 45 and 55 years enumerated at the Census of 1941 who either were or had been married and whose families would normally have been complete at the Census. The data regarding the number of their children born alive have been correlated with the data on birthplace, religion, mother tongue, years of schooling and place of residence, also collected at the Census, in order to ascertain as nearly as possible the bearing of these respective factors upon human fertility. It will be seen that this study takes full advantage of the unique comprehensiveness of the Canadian Census in respect of the characteristics of individuals.

Other bulletins dealing with fertility will be issued as the study of this vital subject proceeds, and will ultimately be consolidated into a Census monograph on this subject.

This study is the work of Dr. Enid Charles. Acknowledgements are due to Dr. O. A. Lemieux and Mr. A. H. LeNeveu of the Census Branch, also to Mr. A. E. Thornton and Mrs. Eva Anderson, who supervised the complicated series of machine processes which provided the data used in the inquiry. The charts were drawn by Mr. J. W. Delisle.

S. A. Cudmore.

S. A. Cudmore,
Dominion Statistician.

Dominion Bureau of Statistics,
March, 1945.

CONTENTS

DEPARTMENT OF TRADE AND COMMERCE

DOMINION BUREAU OF STATISTICS

OTTAWA - CANADA

Dominion Statistician: S. A. Cudmore, M.A. (Oxon.), F.S.S., F.R.S.C.
Census Research Specialist: E. Charles, M.A., Ph.D.

Bulletin F-2

CULTURAL DIFFERENCES IN FAMILY SIZE, CANADA, 1941.

1. INTRODUCTION

Earlier publications of the Dominion Bureau of Statistics (x) have shown that the Canadian birth rate, like that of most other countries, has been declining continuously over a long period. In some countries this process of decline has already led to an average size of family so small that populations must begin to decline in numbers in the near future. Inquiry into the causes of the declining birthrate is thus not merely an academic exercise but seeks to discover the type of social environment best suited to yield healthy and happy families of adequate size. A fruitful way of studying the problem has proved to be the investigation of variations in size of family between groups of people recognizably different in their attitudes to the family, their occupations and standards of living, and so on.

The principal social characteristics associated with differences in size of family are already well-established. Rising standards of living, higher money incomes, concentration in large urban communities, transference of labour from primary production to white-collar occupations, are all found to be associated with a reduction in the average size of the family. Yet the social environment of parents during their adult life does not account completely for the size of their family. Habits of living and modes of thought, the social heritage of many generations, are also powerful determinants of reproductive behaviour. Canada is a particularly rich field for studying differences of this sort.

The group differences which form the subject of the present paper fall into two classes. The first comprises differences in religion, mother tongue and birthplace. These all indicate varying group traditions which an individual acquires at birth or early in life. The second group comprises differences in residential location, either in rural districts or in a large city, and differences in the educational level attained. These both describe differences in the social environment during youth and adult life. Educational differences are perhaps the most liable to misinterpretation and need some introductory explanation. While differences in behaviour between groups of women having varying amounts of education can be attributed in part to the direct effect of the educational process, the edu-

(x) Census of Canada, 1931. Monograph No. 3 "Fertility of the Population of Canada".
"Gross and Net Reproduction Rates, Canada and Provinces, 1920-1942". Bulletin No. F-1. "Trends in Canadian Family Size". 1944.

cational level attained is probably far more important as an indication of higher social status, larger incomes, and a greater probability that the husbands will be found in occupations connected with trade, commerce, or service, all group characteristics associated with smaller families.

We can look at the influences determining family attitudes from another point of view. Some are recognized as the proper sphere of individual choice while others are more directly subject to social control. In a democratic state, religion is held to be the concern of the individual conscience and no state interference, either direct or indirect, is tolerated. Technically mother tongue occupies the same position, but in Canada different mother tongues are in practice differentially subject to change. Both French and English are official languages, spoken by large numbers, and both used as educational media. Manitoba recognized schools in a foreign language medium up to 1916, but, apart from this minor exception, education has to be in either French or English to comply with the legal requirements of compulsory primary education. High school and advanced education is available in both official languages. Thus, while there is no direct interference with the use of other mother tongues, the necessity for learning French or English in addition does not encourage the perpetuation of foreign mother tongues. On the other hand, the distribution of the population as between farms, rural communities, small towns and cities, the admission as residents of persons born in another country, the length of the educational period, and the extent of opportunities for higher education, are all recognized as legitimate objects of public interest.

The Canadian Census of 1941 provided a large body of data which can be related to changes in family size. The F series of Census bulletins will present studies of particular aspects of the subject. The first to be issued dealt with secular trends in family size and with the relation between age at marriage and size of family. Provincial and rural-urban differences in family size were also shown.

The present study is confined to women between the ages of 45 to 54 years at the Census of 1941. While the period of child-bearing of these women extended over a number of years, it probably had its peak years immediately after the last war. We are thus observing a transition period between the expanding economy of the early years of the century, with heavy immigration and slow decline in the birth rate, and the later post-war years when the population had become more stable and the birth rate was declining rapidly. Group differences in this period are very clearly seen and illustrate the process of development leading to the lower fertility of the present day with probably less well-marked differences between social groups.

The process of reducing to order the infinite complexities of man's social behaviour necessarily involves a considerable degree of over-simplification. Just as we have seen that educational level should be regarded as primarily a clue to economic status, so also differences in religion and mother tongue not only have their roots in different economic backgrounds but are associated with such differences at the present time. Later studies in this series will deal with economic and occupational differences and will attempt to relate them more explicitly to the subject matter of the present study. Qualifications cannot be continually reiterated without obscuring any sort of conclusion, but, having established that such a background exists, we can state the main purpose of this study in broad outline. We shall try to show how the average size of family associated with varying types of social heritage becomes modified in response to a changing social environment.

2. DESCRIPTION OF DATA

This study is concerned with women between the ages of 45 and 55 years enumerated at the Census of 1941. On a single punch card, the Population Card, were recorded for every woman, present age, conjugal condition, children ever born and now living of those who had been married, and a number of other particulars. The attributes selected for study in relation to size of family, were: birthplace, religion, mother tongue, years of schooling, and place of residence. Earnings and occupation are not recorded on the population card. They form the main topics dealt with on the Family and Occupation card and will be the subjects of later studies.

In classifying the female population, the aim was to obtain groups homogeneous in respect of all the variables studied, arranged in a scheme which would not be too unwieldy for subsequent analysis but would include the bulk of the population. This involved omitting certain defined classes. The grouping was as follows: - Residence - (i) rural, (ii) cities with over 30,000 inhabitants. Birthplace and mother tongue - (i) Canadian-born having French, English, or European mother tongue. In this study European denotes countries of Europe, including the U.S.S.R., other than the British Isles and France. (ii) European-born, European mother tongue. (iii) British born, English mother tongue. Religion(x) - (i) Roman Catholic, (ii) Protestant. Birthplace - (i) farm or rural non-farm, (ii) urban. Years of schooling - (i) less than 9 years, (ii) 9 through 12 years, (iii) 13 years and over.

The classes formed require some explanation. The population living in villages, towns and cities with less than 30,000 inhabitants and rural parts of Metropolitan Areas was omitted. In general, fertility decreases fairly regularly as we pass from rural districts, through incorporated places of increasing size, to the largest cities, but the classification is somewhat confused by the necessarily arbitrary nature of urban boundaries. The two groups retained show a clearcut rural-city difference, uncomplicated by the heterogeneous character of the smaller incorporated places. The effect of urbanisation may be somewhat exaggerated in comparison with variables where the whole field is covered. The rather large group of United States-born were omitted. Other omissions are: Asiatic mother tongues and birthplaces, Indian and Eskimo mother tongues, Jewish and Greek Orthodox religions. Cases omitted also include those in which particulars for religion, birthplace, etc. were not given. There were none with present age not stated, since the unstated ages were distributed before the cards were punched. Unstated ages at marriage and unstated number of children born and living (very few in number) were distributed after the sorting was done. A few cases which did not fit into the classificatory scheme, e.g. born in Sweden, English mother tongue, born in Britain, Gaelic mother tongue, were excluded. The number of women included was 372,732. This is 64 per cent of the total female population of the specified ages enumerated at the Census. The average size of family of the selected women who had been married was 4.24 children. The average size of family of the whole female population in the chosen age group was 4.18. Children born to single women are excluded(≠).

Among the excluded groups, the fertility of the United States-born would resemble that of the Canadian-born in similar categories. Supplementary data will

---

(x) Roman Catholic includes Greek Catholics. A list of religious denominations included under the rubric "Protestant" is given in Appendix B.

(≠) Vide Bulletin F-1, page 52.

be presented about other important excluded groups and will show that, when classified in the same way, they lie within the limits of high and low fertility exhibited by the population in the primary classification. The age group 45-54 was selected because families of women over 45 are, except for negligible exceptions, complete, and, by excluding older women over 54, most of the effect of secular changes in fertility is eliminated. This study assumes that the decline in fertility during the period does not affect comparisons of social groups in the selected age group.

3. DIFFERENCES IN SIZE OF FAMILY OF MARRIED WOMEN

The present section deals with average number of children ever born to women who are or have been married. The classificatory scheme employed is not symmetrical with respect to country of birth, since all the mother tongue groups are not represented in each country of birth. The first part of the analysis will show that, when classified according to educational level, religion, etc., no significant differences were found between Canadian and foreign born. The main part of the analysis will then discuss the effect of all the variables studied in a mainly Canadian-born population. Finally regional variations and differences between provinces and individual cities will be presented in so far as sufficient numbers are available.

(a) Differences associated with country of birth.

(i) Canadian and European-born

The European-born in Canada fall into only one mother tongue category. Table I shows average number of children born to women reporting a European mother tongue, cross-classified by whether Canadian or European-born, by religion, years of schooling, type of residence, and farm or non-farm birthplace. There were no individuals in one cell of the table, viz., Canadian-born Roman Catholic, 13 years schooling, rural, born non-farm. The tabulated value for this cell was obtained by interpolation.

We can think of the figures shown in Table I and similar tables as giving the size of typical families of different kinds. For example the typical Canadian-born married woman of the given age, speaking a foreign mother tongue, born on a farm but resident in a city, and with 9 to 12 years schooling, would have had three children; while the European-born Protestant woman, in similar circumstances, would have had 2.73 children, and so on. The grand means shown at the foot of Table I and similar tables are averages of typical family sizes shown above. So they indicate the differences associated with a single factor when the proportions in other categories are equalised. The difference between the Roman Catholic and Protestant means is the difference that we would see if equal numbers of both religions lived in rural districts and if adherents of both religions had equal amounts of schooling and so on. Actual average family size associated with these religious groups would be quite different from the means shown, since in fact different proportions are rural, are English-speaking, etc. Table I, II, and similar tables show the results of the investigation sufficiently clearly for those readers who do not wish to follow the statistical analysis in detail. The analytical tables IA, IIA, (Appendix A) etc., are useful in two ways:- (a) They show which of the differences between means could have arisen by chance. We can thus distinguish between those variables associated with important differences in family size and those where no such difference is shown in the present study. (b) The statistical analysis reveals interactions between the variables not otherwise easily detectable. For example, we

shall see later that religious differences have affected family size in different ways among the Canadian-born and among the foreign-born.

Table I. EUROPEAN MOTHER TONGUE AND BIRTHPLACE

Average number of children ever-born to married women aged 45 - 54 years reporting a European(x) mother tongue

	Canadian-born		European-born	
	Roman Catholic	Protestant	Roman Catholic	Protestant
0 - 8 years schooling -				
Rural				
Born farm	7.15	5.86	6.41	5.51
Born non-farm . . .	5.67	4.46	5.55	4.66
City				
Born farm	4.93	3.68	4.35	3.88
Born non-farm . . .	4.55	3.03	4.44	3.49
9 - 12 years schooling -				
Rural				
Born farm	4.25	4.06	4.83	4.30
Born non-farm . . .	4.00	2.93	3.48	3,41
City				
Born farm	3.00	3.63	3.23	2.73
Born non-farm . . .	2.84	2.56	3.26	2.39
13 years schooling and over -				
Rural				
Born farm	4.00	3.14	3.63	3.75
Born non-farm . . .	(3.86)	3.00	2.31	2.57
City				
Born farm	3.00	2.80	1.00	2.50
Born non-farm . . .	3.87	2.00	2.24	1.62

Grand Means(/)

Canadian-born	3.84	Rural	4.28
European-born	3.56	City	3.13
Roman Catholic	3.99	Born farm	3.98
Protestant	3.42	Born non-farm	3.42
0 - 8 yrs. schooling	4.85		
9 - 12 " "	3.43	All	3.70
13 yrs. schooling and over.	2.83		

(x) Other than French and English.

(/) In this and similar tables grand means are marginal means, e.g., Protestant grand mean is average of all cells in the two Protestant columns.

The means of Table I show that the factors of religion, education, and rural, vs. city residence behave as we might expect. It is rather surprising that among those with a European mother tongue, fertility is higher among the Canadian born, though by only a small amount. Both populations are very heterogeneous, so that an unequivocal result is hardly to be expected. A partial explanation is afforded by the fact that the persistence of a European language in Canada perhaps implies a group living in some degree of isolation, while the foreign born are a more normal sample of the population of their country of origin.

The significance of the difference between means was tested in the usual way by an analysis of variance.(x) Table IA (Appendix A) gives an analysis of Table I. In a table of this type there are two ways of testing significance. Interactions involving more than two factors can be regarded as displaying the effects of random variation, i.e., variation due to causes other than those studied. In the present case a more direct estimate is possible. The sizes of families of individual women are known and can be used to estimate random error. Since the groups are of unequal size the method of Yates and Brandt(/) was used to arrive at an approximate estimate of error. In practice computation of error from the actual families, though possible, would have involved considerable labour. Instead an estimate was made from a known distribution of family size of women of the same age group at the same fertility level. An approximate estimate of this kind seems adequate since, as is only too common in sociological investigation, normal distributions are conspicuous by their absence, and tests of significance cannot be precise. Fortunately most of the differences revealed are of a magnitude so much greater than the estimated error that their significance is beyond all reasonable doubt. It is possible, on the other hand, that some significant differences which really exist may be missed.

Owing to the extreme smallness of some of the groups in Table I, the estimate of error based on the distribution of individual families is very high. According to this standard, only the differences associated with education and rural vs. city residence are clearly significant. However, the birthplace difference is insignificant even when compared with the much lower estimate of error in (c), so we are safe in disregarding it. Both Canadian and European-born foreign-language groups were combined to get groups of adequate size for the investigation of the remaining factors presented in Section 3 (b).

(ii) Canadian and British-born

As before, a comparison between Canadian and British-born is restricted to a single mother tongue, English. Though other mother tongues are found in Britain, too few individuals were available. Table II shows average size of family of married women among Canadian and British-born with English mother tongue. The analysis is more straightforward than that of the previous section, since the groups are more even in size and a lower fertility level suggests less variability within groups. It is obvious that the difference between Canadian and British-born is insignificant. The result is interesting in view of the low fertility of counties with a preponderance of British-born. When broken down by religion and urbanization, there is no significant difference between British and Canadian-born in respect of the proportions with advanced education, but the proportion of Roman Catholics among the British-born is much less. The apparent association

(x) A technical note on this method of analysis will be found in Census Monograph No. 7. "The Canadian Family", page 117.

(/) Vide Snedecor "Calculation and Interpretation of Analysis of Variance and Covariance, page 52.

of British birth with low fertility may be due to concentration of British-born in Protestant and more urbanized communities or to economic differences within the same educational level.

Table II. ENGLISH MOTHER TONGUE AND BIRTHPLACE

Average number of children ever-born to married women aged 45 - 54 years, reporting English as mother tongue

	Canadian-born		British-born	
	Roman Catholic	Protestant	Roman Catholic	Protestant
0 - 8 years schooling -				
Rural				
Born farm.	5.68	3.97	5.45	3.81
Born non-farm.	5.17	4.07	4.34	3.63
City				
Born farm.	4.19	3.01	3.68	3.07
Born non-farm.	3.98	2.85	3.65	2.85
9 - 12 years schooling -				
Rural				
Born farm.	5.04	3.34	4.74	3.42
Born non-farm.	4.12	2.89	3.26	3.02
City				
Born farm.	3.41	2.35	3.00	2.55
Born non-farm.	2.99	2.14	3.06	2.48
13 years schooling and over -				
Rural				
Born farm.	4.21	2.70	3.00	2.85
Born non-farm.	2.43	2.37	2.80	2.51
City				
Born farm.	2.76	1.96	3.58	2.44
Born non-farm.	2.57	1.85	2.95	2.05

Grand Means

Canadian-born.	3.33	Rural	3.70
British-born	3.26	City.	2.89
Roman Catholic	3.75	Born farm	3.51
Protestant	2.84	Born non-farm	3.08
0 - 8 years schooling. . . .	3.96		
9 - 12 years schooling	3.24	All	3.30
13 years schooling and over. .	2.69		

The results of Table II will be referred to again in later sections but one point of interest in connection with British birthplace may be noted here. The interaction between religion and birthplace is much larger than the birthplace effect and is possibly significant. The religious difference is greater among the Canadian-born than among the foreign-born. This suggests a greater variety of religious attitudes affecting reproductive behaviour among the Canadian-born. The effect is, however, of a much smaller order of magnitude than the major differences associated with religion, education, urbanization and mother tongue.

(b) Differences in family size associated with religion, urbanization, education, mother tongue, farm birthplace.

The main objective of this section is to show the cumulative effect of all five variables and their interaction in the population. Table III shows the group means. The population is Canadian-born, except for the addition of the foreign-born foreign-language group. The assumption on which the analysis is based is that the differences due to each variable are additive. Fig. 1 shows the differences graphically and indicates to what extent the values of average family size calculated on the additive assumption correspond with the observed values. The upper bar corresponding to each group gives the mean size of family calculated by adding or subtracting the differences between the means of each variable taken separately and the grand mean. The first group shown is that having the lowest calculated value, viz:- Protestant, English mother tongue, city, born non-farm, 13 years schooling. Of the four possible sets of groups, rural, born farm, rural, born non-farm, city, born farm, city, born non-farm, only the first and last are shown. The two intermediate sets of groups are omitted in order to simplify the diagram. Successive groups are placed in order of magnitude of the calculated values, and the differently shaded portions of each bar indicate the amounts added by changes, such as from Protestant to Roman Catholic and from 13 years schooling to 9 - 13 years and again to less than 9 years.

The lower bar in each group indicates the observed value of the group mean. There are three large systematic discrepancies. Where French mother tongue, Roman Catholic religion, and rural born farm occur together, the observed value is greater than the calculated by an amount equal to at least one child. There are compensating deficiencies, but these are less systematically arranged. The explanation of the discrepancies will become clearer in the light of an analysis of the variance. While Fig. 1 is an undue simplification of a complicated situation, it brings out in a graphic manner how striking differences between sections of the Canadian population are the cumulative result of social heritage and present circumstances varying in a number of different ways. Though most of these differences will be found to be highly significant, they are individually fairly small in amount, and no one cause of variation is outstandingly more important than the rest. Table IIIA shows an analysis of variance for Table III.

With a population better distributed among the cells of the table, the estimate of random error is lower in the present case than in the two previous analyses. Most of the interactions between two factors and all the triple and higher order interactions are insignificant when tested against the estimate of random error. Significance tests based on higher order interactions or on the quintuple interaction alone lead to substantially the same conclusions about significance as the F ratios given in the table. The first four variables are clearly highly significant. The degrees of freedom available are not enough to enable us to determine whether the order of magnitude of the different factors is significant, but the fact that the difference between farm and non-farm birthplace is in all the tables considerably smaller than the rest and that it is less con-

Table III. RELIGION, URBANIZATION, EDUCATION, MOTHER TONGUE, FARM BIRTHPLACE

Average number of children ever born to married women aged 45 - 54 years

	French Mother Tongue		European Mother Tongue		English Mother Tongue	
	Roman Catholic	Protestant	Roman Catholic	Protestant	Roman Catholic	Protestant
0 - 8 years schooling -						
Rural						
Born farm	8.33	5.89	6.45	5.61	5.68	3.97
Born non-farm	7.35	4.99	5.56	4.64	5.17	4.07
City						
Born farm	6.06	3.90	4.36	3.85	4.19	3.01
Born non-farm	5.46	4.34	4.45	3.40	3.92	2.85
9 - 12 years schooling -						
Rural						
Born farm	7.48	3.68	4.78	4.24	5.04	3.34
Born non-farm	5.99	3.43	3.50	3.35	4.12	2.89
City						
Born farm	5.30	3.81	3.22	2.96	3.41	2.35
Born non-farm	4.33	2.43	3.22	2.43	2.99	2.14
13 years schooling and over						
Rural						
Born farm	6.25	3.43	3.65	3.53	4.21	2.70
Born non-farm	5.42	2.17	2.31	2.64	2.43	2.37
City						
Born farm	4.46	2.00	1.40	2.55	2.76	1.96
Born non-farm	3.62	1.41	2.51	1.70	2.57	1.85

Grand Means

Roman Catholic	4.50	French mother tongue	4.65
Protestant	3.22	European mother tongue	3.60
		English mother tongue	3.33
Rural	4.46		
City	3.26	Born farm	4.16
		Born non-farm	3.56
0 - 8 years schooling	4.90		
9 - 12 " "	3.77	All	3.86
13 years schooling and over	2.91		

AVERAGE SIZE OF FAMILY, CULTURE GROUPS, CALCULATED AND OBSERVED VALUES

KEY → PROTESTANT, ENGLISH MOTHER TONGUE, CITY, 13+YRS SCHOOLING .840

ROMAN CATHOLIC 1.280

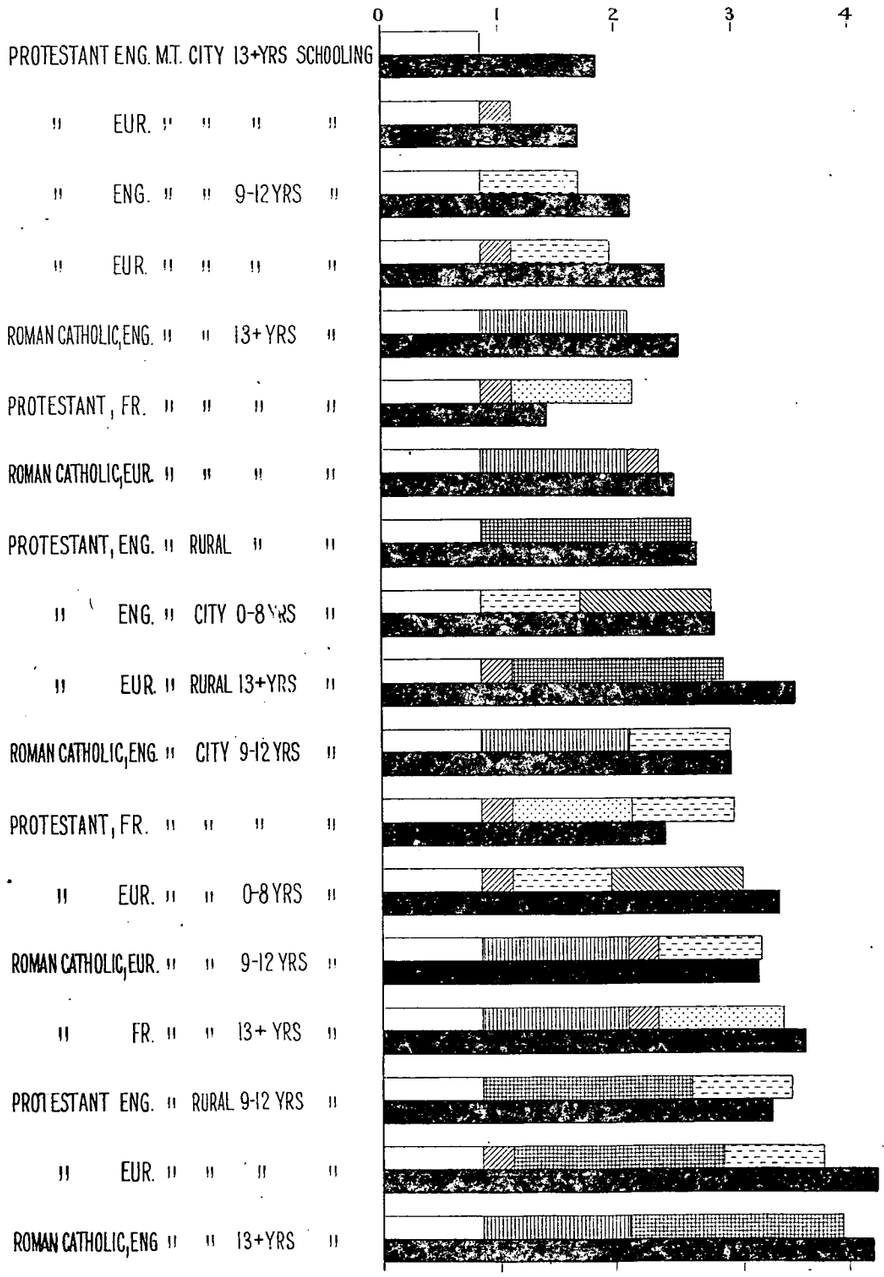
MOTHER TONGUE: EUROPEAN .264, FRENCH 1.050

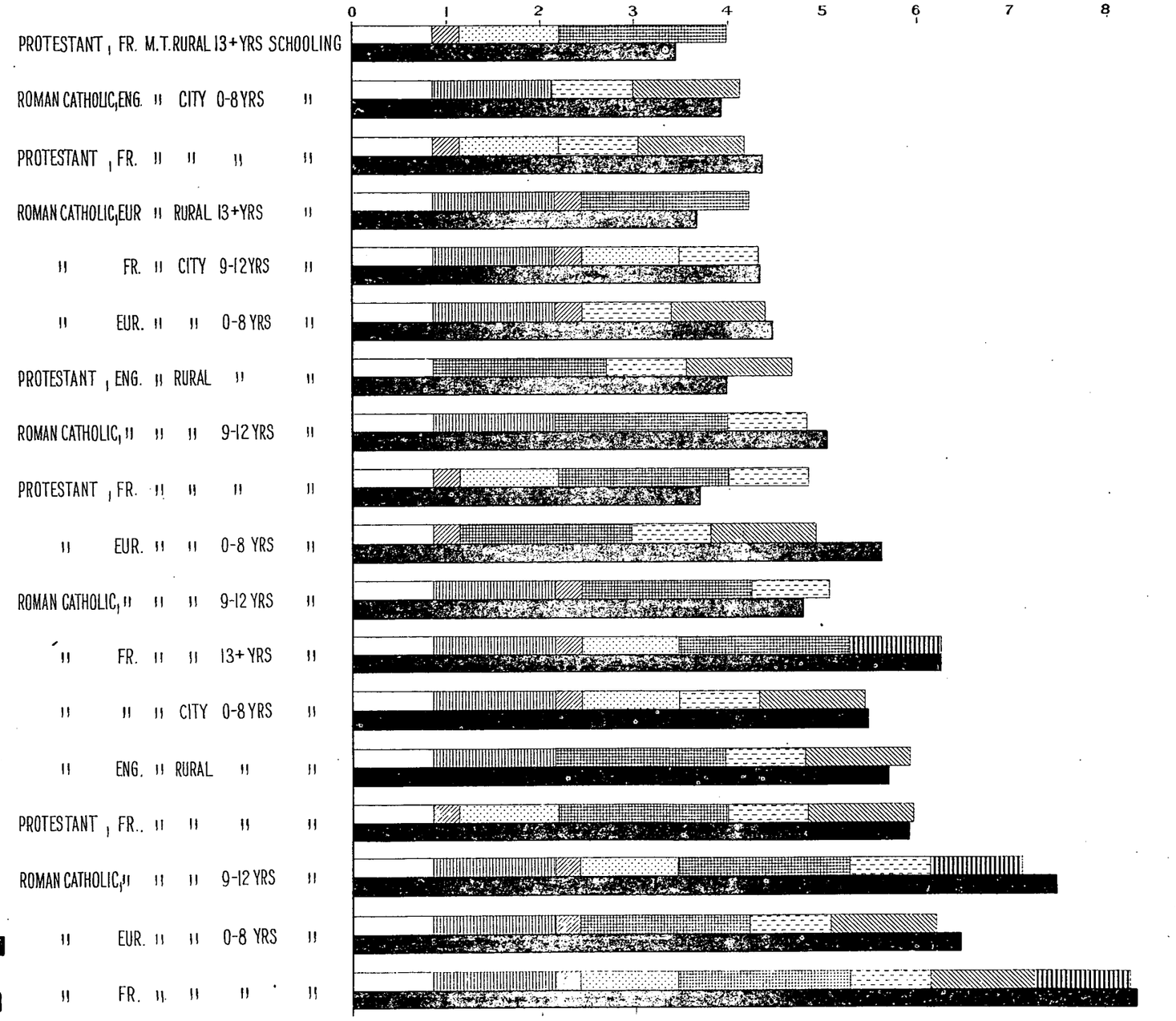
RURAL, BORN FARM 1.812

SCHOOLING: 9-12 YEARS .855, 0-8 YEARS 1.128

FRENCH M.T., ROMAN C., RURAL 1.000

OBSERVED VALUES → KEY





sistent indicate that it is less important than the first four factors. The farm birthplace distinction in part denotes a change of residence, either early or late in life. In part it can also distinguish the rural non-farm from the rural farm population. The interaction between farm birthplace and urbanization suggests that the latter is the more important distinction, but the differences are too small to permit of a definite answer. One interaction, that between religion and mother tongue, stands out as important. The difference between Roman Catholic and Protestant is greatest among those with French mother tongue, least in those with European mother tongue.

The more important of the interactions between variables and the discrepancies between observed and theoretical means can be interpreted in terms of the Canadian scene. The effect already noted of the conjunction of French mother tongue with religion and rural residence points to the existence of what may be called the French-Canadian culture complex rooted in language, religion, and in agriculture as a way of life. This complex is most greatly modified by city residence and less so by advanced education. Higher education is available to the French Canadians in terms of their own language and culture so it is not surprising that it has less effect in modifying family attitudes than the more abrupt changes in ways of living developed in the transition from farm to city. In contrast, another high fertility combination, the European mother tongue Roman Catholic is more affected by education than by urbanization. Here advanced education means the assimilation of an alien culture. The isolating mechanism among the European language group tending to maintain large families is primarily one of illiteracy in the official cultures. At very low levels of fertility we usually find that differences important at higher levels tend to disappear. The low fertility combination, of English mother tongue and Protestant religion, shows such a general levelling-out tendency. The French Protestant groups usually contain very few individuals. Hence the group means have very large probable errors and the observed characteristics of this group may not be significant.

(c) Cultural interpretation of provincial differences

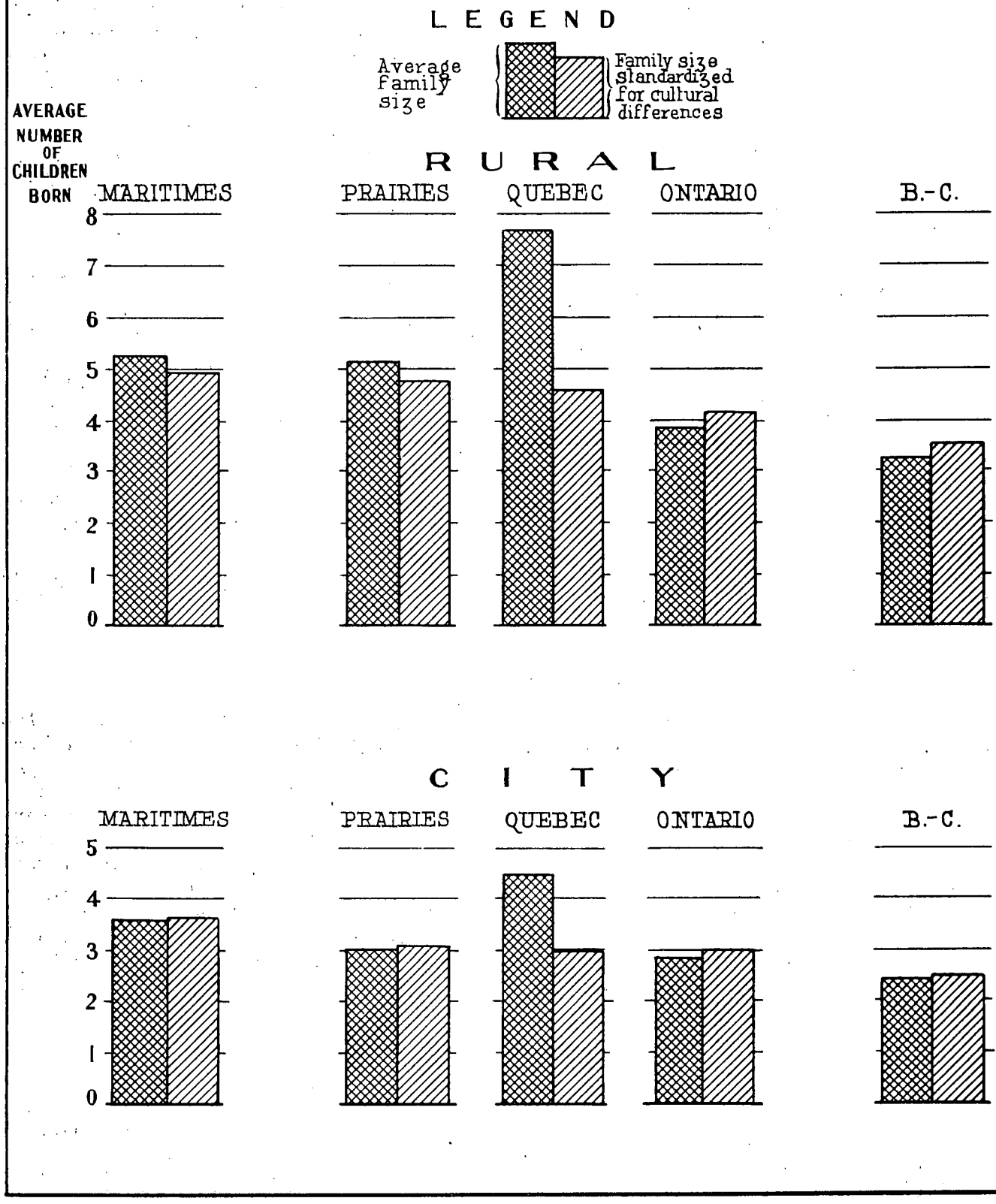
Many of the social groups described in previous sections are missing from some provinces and even from some regions, or are represented only by a negligible number of cases. So a systematic analysis of all variables is impossible. Enough groups remain to give some idea of how cultural differences account for observed regional differences in family size. Fig. 2 is based on 18 city groups and 16 rural groups, accounting for from a half to three-quarters of the respective populations. All French Protestant groups are omitted and most of the French and European mother tongue higher education groups. Columns (a) in Fig. 2 show the observed family size of married women in the Maritimes, Quebec, Ontario, the Prairies, and British Columbia(x). Columns (b) show the mean size of family obtained by averaging the means of all the social groups represented in each region. They thus show differences in family size which would remain if the larger culturally different groups were equally represented in each region.

The principal effect of the equalization of cultural differences is to obliterate the difference between Quebec and other regions. Aside from Quebec, the range of rural differences is somewhat less, but there is little change in the city rates. Some regional differences remain within homogeneous cultural groups.

(x) Bulletin No. F-1 "Trends in Canadian Family Size".

Figure 2

REGIONAL DIFFERENCES IN FERTILITY



Larger spaces separating the Maritimes and British Columbia from the rest of Canada in Fig. 2 draw attention to the fact that rates are most often highest in the Maritimes and still more consistently lowest in British Columbia. These residual variations reflect economic and occupational differences, and the density and metropolitan character of urban populations. Interpretations of remaining regional differences can be only briefly indicated here. The low fertility of British Columbia has been discussed in a previous paper.(x) It was shown to be independent of occupational differences. Higher standards of living and the metropolitan character of the rural population were mentioned as contributing factors. The present study confirms the latter point. Fertility rates of rural culture groups in British Columbia are consistently far below those in other regions and at a level characteristic of urban populations. In the earlier discussion, religion was mentioned as a possible contributory factor. We now see that it is only a partial explanation, since rates in both Roman Catholic and Protestant groups are lower than elsewhere, though the conjunction of a mainly English-speaking Protestant population with low fertility occupations and low fertility types of farming(/) can account for at least part of the difference unexplained when either factor is considered alone.

The Maritimes are characterized by generally lower money wages and farm values, and have no city of metropolitan character. Decline in fertility has been less rapid than elsewhere in Canada. Some aspects of the situation in Prince Edward Island have been discussed elsewhere.(o)

A more detailed analysis of regional variations will show some interesting aspects of the responses of culture groups to different environments. Owing to the limitations of representation referred to, the analysis will fall into three parts. (i) Three complex culture groups, French mother tongue Roman Catholic, English mother tongue Roman Catholic, and English mother tongue Protestant; educational groups, 0-9 years and 9-12 years; rural born farm and city born non-farm; regions. (ii) English mother tongue Protestant groups; all educational groups; rural and city; born farm and non-farm; regions. (iii) European mother tongue; 0-8 years schooling only; Roman Catholic and Protestant; rural, city; born farm and non-farm; regions excluding Maritimes.

(i) Table IV shows average family sizes of groups described under (i) above, and the corresponding analysis of variance is given in Table IVA. Since the culture groups combine the effect of two variables, religion and mother tongue, and rural residence and farm birth are also combined, naturally these two categories account for most of the variance. Again since there are only two educational groups, this factor occupies a comparatively insignificant place. The role of regional variation is small but highly significant. Of the total regional variation, 60 per cent is contributed by British Columbia, a result of the marked flattening-out of all high fertility rates in this province.

(x) Charles, "Differential Fertility in Canada, 1931". Can. Journ. Econ. & Pol. Sci. May, 1943, page 208.

(/) Intensive types of agriculture for a city market near by are usually associated with small families.

(o) Charles, "The Trend of Fertility in Prince Edward Island". Can. Journ. Econ. & Pol. Sci. May, 1942.

Four of the interactions are significant. One of these involves rural-city residence and culture groups and is another apsect of the French Canadian culture complex referred to earlier. There are three interactions involving regions. The first, between culture complex and regions, reflects the fact that French Catholic fertility rates are highest in Quebec. They are also high in New Brunswick but lower in the other Maritime Provinces. The French Canadian culture complex appears to be localized in the two former provinces. As we travel further from the centre, its effect on fertility rates becomes greatly dimished, and almost disappears

Table IV. REGIONAL DIFFERENCES IN FERTILITY

(i) French mother tongue Roman Catholic, English mother tongue Roman Catholic and Protestant - Education, urbanization. Average number of children ever-born to married women aged 45 - 54 years

	French Mother Tongue Roman Catholic		English Mother Tongue Roman Catholic		English Mother Tongue Protestant	
	Rural	City	Rural	City	Rural	City
	Born Farm	Born Non-farm	Born Farm	Born Non-farm	Born Farm	Born Non-farm
0 - 8 years schooling						
Maritime Provinces	7.80	6.20	6.15	4.76	4.99	3.74
Quebec	8.53	5.47	6.47	3.94	3.81	2.96
Ontario	7.66	5.46	5.20	3.76	3.61	2.76
Prairie Provinces	7.48	4.27	5.82	3.58	4.48	2.99
British Columbia	5.02	3.81	4.76	2.81	3.73	2.58
9 - 12 years schooling						
Maritime Provinces	6.45	3.45	5.33	3.41	3.80	2.46
Quebec	7.66	4.33	5.97	3.05	3.17	1.96
Ontario	6.73	4.48	4.64	2.91	2.87	2.08
Prairie Provinces	7.11	3.72	4.48	2.93	3.60	2.38
British Columbia	4.08	2.31	4.14	2.59	2.90	2.05

Grand Means

French Mother Tongue Roman Catholic	5.60	Maritime Provinces	4.88
English Mother Tongue Roman Catholic	4.33	Quebec	4.78
English Mother Tongue Protestant	3.15	Ontario	4.35
		Prairie Provinces	4.40
0 - 8 years schooling	4.82	British Columbia	3.40
9 - 12 years schooling	3.90		
Rural non-farm	5.28	All	4.36
City born non-farm	3.44		

in Prince Edward Island and British Columbia. The second interaction, between regions and rural-city residence, shows that rural-city differences are greatest in Quebec and the Prairies. The low fertility of Montreal and Winnipeg depresses the city rates in these regions. Fertility is equally low in Toronto and Vancouver but in the provinces of Ontario and British Columbia rural fertility approximates more closely to the city rates. As in British Columbia, much of the Ontario so-called rural population forms part of large urban concentrations. The third interaction, between regions and education, depends on rather unexpected rates of French Catholics in Saint John and Halifax. As the base populations are very small, this could be a random effect, but is in fact corroborated by other evidence.

(ii) Tables V and VA show regional variations among Protestant English Mother Tongue groups cross-classified by educational level, rural and city residence, born farm and non-farm, and the corresponding analysis of variance. At this low fertility level, within group variability is small and the residual interactions were used as an estimate of error. Again regional differences account for a small but highly significant part of the variation. In contrast to the preceding section, the Maritimes contribute 56 per cent of the regional variation. In these provinces cultural differences tend towards equality at a high fertility level, consequently they stand out when all the rates in the table are rather low.

Of the two interactions involving regions, that between regions and education again reveals greater inequality between educational levels in the Maritimes. In the last section it appeared among French Roman Catholic groups in the cities. In the present section it occurs among other culture groups in rural New Brunswick and Nova Scotia. So the greater effect of advanced education on reproductive behaviour in the Maritimes seems to be a genuine property of the situation there. The second regional interaction, that between regions and urbanization, repeats the greater rural-city differences in Quebec and the Prairies found previously. The interaction between education and urbanization shows greater educational differences in rural parts than in cities. This is in accord with the general tendency for differences to disappear at low fertility levels.

Table V. REGIONAL DIFFERENCES IN FERTILITY

(ii) English Mother Tongue Protestant groups - education, urbanization, farm birthplace. Average number of children ever-born to married women aged 45-54 years.

	Rural		City	
	Born Farm	Born Non-farm	Born Farm	Born Non-farm
0 - 8 years schooling -				
Maritime Provinces	4.99	4.95	3.91	3.74
Quebec	3.81	4.44	3.28	2.96
Ontario	3.61	3.67	2.86	2.76
Prairie Provinces	4.48	4.32	3.29	2.99
British Columbia	3.73	3.35	2.69	2.58
9 - 12 years schooling -				
Maritime Provinces	3.80	3.40	2.98	2.46
Quebec	3.17	2.47	1.89	1.96
Ontario	2.87	2.64	2.18	2.08
Prairie Provinces	3.60	3.21	2.57	2.38
British Columbia	2.90	2.26	2.22	2.05
13 years schooling and over -				
Maritime Provinces	3.19	2.51	2.23	1.86
Quebec	2.40	2.03	1.87	1.43
Ontario	2.49	2.29	1.90	1.86
Prairie Provinces	3.08	2.74	2.11	2.10
British Columbia	2.12	2.12	1.83	1.78

Grand Means

0 - 8 years schooling	3.62	Maritime Provinces	3.34
9 - 12 years schooling	2.65	Quebec	2.64
13 years schooling and over	2.20	Ontario	2.60
		Prairie Provinces	3.07
Rural	3.22	British Columbia	2.47
City	2.43		
		All	2.82
Born Farm	2.93		
Born Non-farm	2.71		

(iii) Table VI shows regional variations in European mother tongue groups with 0 - 8 years schooling only. Table VIA gives the corresponding analysis of variance. The scope of this analysis is rather restricted on account of the localization and lack of advanced education among those with foreign mother tongue. Regional differences are associated with a relatively large share of the variation and the Prairies are responsible for 74 per cent of the regional variation. A new interaction, that between religion and regions, emerges as probably significant. We have already seen that the religious difference is less marked in the foreign language groups. We now see that it is least marked in the Prairies where fertility rates among these groups are highest and where large cohesive foreign language blocks existed during the period of this study. Evidently the foreign language effect manifests itself most strongly under conditions of group settlement, and fades out where the foreign mother tongue is dispersed among the general population. In the latter circumstances, the foreign mother tongue itself is probably in process of disappearing.

Table VI. REGIONAL DIFFERENCES IN FERTILITY

(iii) European Mother Tongue, 0 - 8 years schooling - Religion, Urbanization, farm birthplace. Average number of children ever born to married women aged 45 - 54 years.

	Roman Catholic		Protestant	
	Rural	City	Rural	City
Born farm -				
Quebec	5.47	4.56	4.48	3.49
Ontario	4.93	4.49	4.05	3.30
Prairie Provinces	6.90	4.14	6.27	4.47
British Columbia	4.71	3.91	4.40	3.58
Born non-farm				
Quebec	3.73	4.81	2.69	3.45
Ontario	4.36	4.54	3.30	3.02
Prairie Provinces	6.30	4.19	5.41	4.04
British Columbia	4.49	3.75	3.47	2.72

Grand Means

Roman Catholic	4.70	Quebec	4.09
Protestant	3.88	Ontario	4.00
		Prairie Provinces	5.21
Rural	4.68	British Columbia	3.88
City	3.90		
Born farm	4.57	All	4.29
Born non-farm	4.02		

(d) Fertility Characteristics of Individual Cities

The variations of urban fertility rates form a complex field of study. Even the larger cities are of distinct cultural types; some are almost exclusively French Catholic, others are Protestant English, while still others have a more cosmopolitan character. Again some are primarily manufacturing, others service and trade cities. In later bulletins dealing with economic and occupational aspects of cities and towns, a more complete interpretation of fertility differences will be given. The present section will merely outline some ways in which cultural differences affect the apparent fertility rank of the larger cities. Some cities are combined in this study, viz:- Saint John and Halifax, Saskatoon and Regina, Calgary and Edmonton, Vancouver and Victoria. Cities of 30,000 and over can be classified into groups according to cultural characteristics, size and fertility level.

(i) The larger cities include three which are almost exclusively French Catholic, Quebec, Hull and Trois Rivières. Bulletin F-1 shows that these three cities have the highest fertility in the age-group 45-54 years. French Catholic fertility rates are, with one exception, higher in these cities than in others with more mixed populations. The small French Catholic population of Sudbury shows a still higher fertility rate.

(ii) Next to the French Catholic cities, come a group of smaller cities with mixed populations where all the culture groups represented tend to have relatively high fertility rates. Cities in this group are:- Sudbury, Saskatoon and Regina, Saint John and Halifax, Sherbrooke, Verdun, and Fort William. The small English-speaking population of Sherbrooke has low fertility rates but the French rates are high.

(iii) The largest cities tend to have lower fertility rates in all culture groups than the cities previously mentioned. Toronto and Vancouver fall into a class by themselves (See iv below). The remaining five can be arranged from highest to lowest fertility levels as follows: Ottawa, Windsor, Hamilton, Montreal, Winnipeg. At about the same fertility level, when proportions in different culture groups are disregarded, come seven smaller cities, Kingston, Brantford, Calgary and Edmonton, St. Catharines, Kitchener, and London. Kingston, Brantford, St. Catharines and London are predominantly English-Protestant. Kitchener has a considerable foreign-language group which is German-speaking and of long settlement in Canada. Calgary and Edmonton have mixed populations but seem to share the metropolitan characteristics of Montreal and Winnipeg.

(iv) Toronto, Vancouver and Victoria, and a smaller city, Outremont, are alike in that fertility rates for all cultural groups are uniformly at a low level and usually the lowest in Canada. Outremont is part of the Montreal metropolitan area and is characterized by a high concentration of persons engaged in finance and trade, and strikingly high property and rental values.

Comparing the list of cities given above with that shown in Bulletin F-1, we see that the most striking changes are the relative positions of Montreal and Outremont. The metropolitan character of Montreal results in low fertility rates in each separate culture group, though this aspect of the city is disguised in the total fertility rate by the high proportion of French Catholics compared with the

other principal cities. It is noteworthy that the rank of Montreal and Outremont with proportions of different culture groups equalized is also the rank with reference to number of children ever-born to the younger age groups. This suggests that the decline in fertility in the Montreal metropolitan area has been accompanied by some reduction in cultural differences in fertility. Since Outremont is such a well-differentiated economic area with phenomenally low fertility in recent years, the mean numbers of children ever born is worthy of record. Fig. 3 shows these for separate culture groups in Quebec, Montreal City, and Outremont. The levelling effect of the metropolis and especially of its most prosperous section is clearly seen.

(e) Summary of Local Variations

The main points of foregoing sections are summarized below.

(i) Respective regions of Canada are associated with significant differences in average number of children ever-born in the various culture groups. Regional variation is less important than that associated with religion, education and urbanization. It probably reflects differences in standards of living and occupational distribution common to several culture groups.

(ii) The relatively high fertility of Quebec and the Montreal metropolitan area depends on the proportions of women in different culture groups. The fertility rank of older women, when cultural differences are equalised, corresponds to that of all younger women irrespective of cultural differences.

(iii) The French Canadian culture complex is localized in the mainly French Province of Quebec and adjoining parts of New Brunswick. Fertility rates in this culture group are highest in these provinces and in the predominantly French cities of Quebec, Hull and Trois Rivières. Differences in fertility fade out with increasing distance from the centre. Prince Edward Island and British Columbia show least strongly marked cultural differences in fertility, the former at a high fertility level, the latter at a low. The European mother tongue culture complex has similarly a localized centre in the Prairies.

4. MARRIAGE

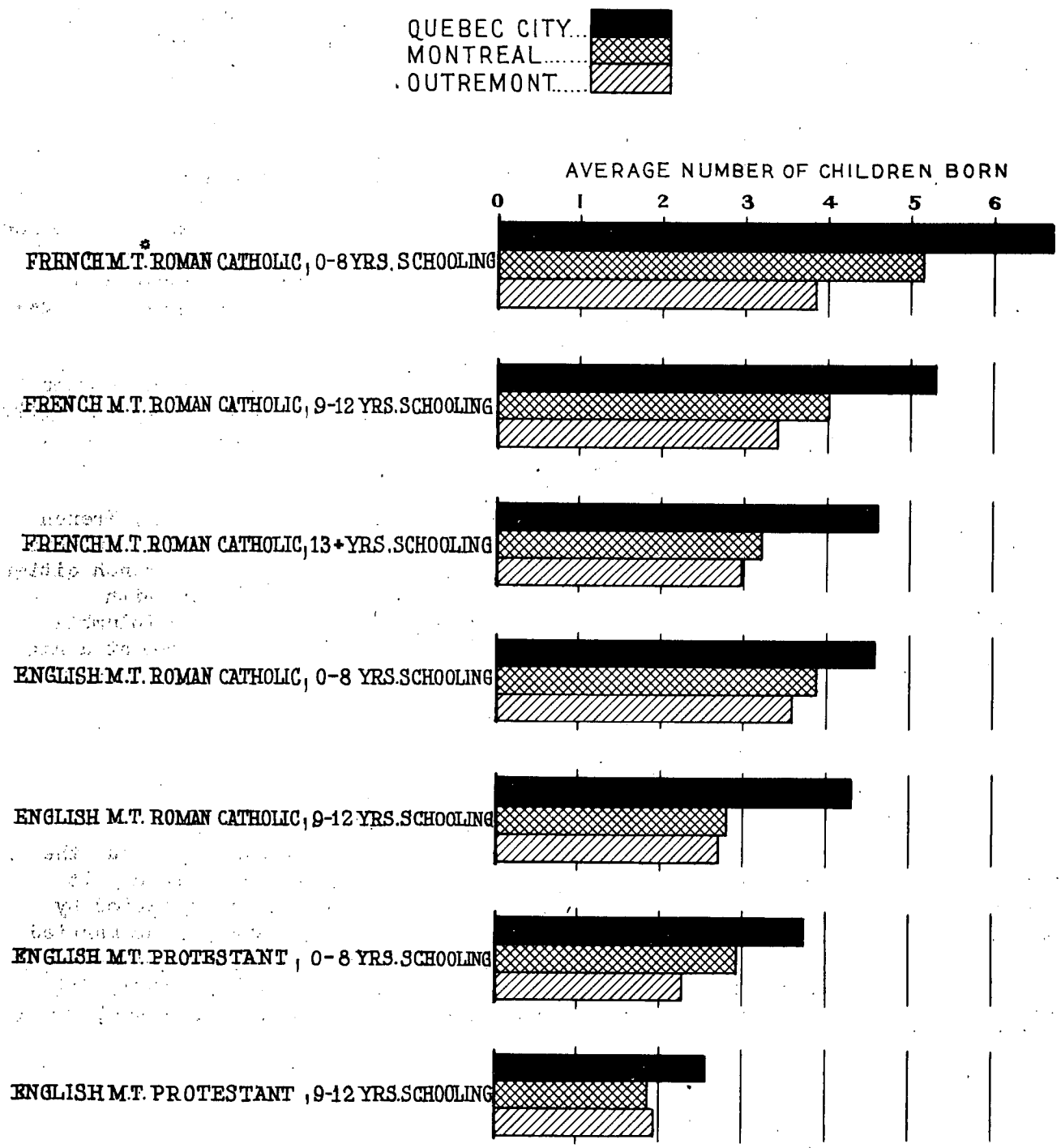
(a) Proportions ever married

So far we have discussed only the fertility of married women, but the reproductive capacity of a population depends also on proportions married. It is easier to generalize about the first component, since it is less affected by short-period changes, and by circumstances which produce high proportions married in certain localities, without affecting so markedly the reproductive patterns of the married. The most obvious example of the latter is immigration. Table VII shows the proportions married among Canadian-born, European-born and British-born.

Figure 3

AVERAGE SIZE OF FAMILY IN QUEBEC CITY, MONTREAL & OUTREMONT

All born non-farm



*M.T. ; Mother Tongue

Table VII. PERCENTAGE OF WOMEN WHO WERE OR HAD BEEN MARRIED

Women aged 45-54 years, selected populations.

	Per cent
Canadian-born.	87
British-born	93
European-born.	98

These figures reflect, not only the fact that female immigration was at this period largely of the married or about to be married, but also in part special characteristics of immigrant groups. Among the small group of French Protestants, 93 per cent had been married. This suggests that the group arises to some extent through intermarriage. From the standpoint of this study, interest will centre chiefly on the Canadian-born. We must recollect again that proportions married in the age group studied reflect the conditions of a particular period, during which marriage rates were disturbed by the last world war. In the younger age groups marriage rates were again profoundly modified by the depression and by the present war, while the tendency towards smaller families operated to restrict marriage more in some groups than in others.

Table VIII shows percentages ever-married in the culture groups studied in previous sections. Those with foreign mother tongue are Canadian-born only. In spite of the rather erratic nature of the figures for European mother tongue and French Protestant, the general picture is fairly clear. Considering first only French and English mother tongue Canadian-born, all other variables are associated with significant differences in proportions married. The most important factors are education, urbanization and religion. Both advanced education and urbanization reinforce the effects previously noted on size of family of married women by reducing also the proportions married. The most outstanding feature of the whole table is the low percentage married among women with 13 years or more schooling. The average of the means of all Canadian-born, both French and English mother tongue, with advanced education is 71 per cent married as against 84 per cent married for similar groups with 9 - 12 years schooling. Postponement of marriage reflects, not only a prolonged period of training, but also the variety of occupations open to trained women as an alternative to marriage.

There are significant interactions of education with urbanization and religion. The lower proportions married among city residents and among Roman Catholics are both accentuated in the groups with 13 years and more schooling. The religious difference has a reverse effect on proportions married. There are fewer who have been married among Roman Catholics than among Protestants. Both mother tongue and farm birthplace are of minor importance, and the effect of the latter is again in a reverse direction.

Table VIII. PROPORTIONS MARRIED - CANADIAN BORN CULTURE GROUPS

Percentage ever-married among women aged 45-54 years.

	Rural		City	
	Born Farm	Born Non-farm	Born Farm	Born Non-farm
	%	%	%	%
0 - 8 years schooling				
Roman Catholic				
French mother tongue	94	93	87	88
English mother tongue	88	91	84	82
European mother tongue	94	96	87	91
Protestant				
French mother tongue	95	100	92	93
English mother tongue	93	94	88	89
European mother tongue	93	92	90	88
9 - 12 years schooling				
Roman Catholic				
French mother tongue	87	80	72	76
English mother tongue	85	82	71	73
Protestant				
French mother tongue	93	97	78	91
English mother tongue	91	92	80	81
European mother tongue	88	93	68	83
13 years schooling and over				
Roman Catholic				
French mother tongue	68	64	50	65
English mother tongue	75	72	53	59
Protestant				
French mother tongue	88	100	60	81
English mother tongue	86	86	64	69

Tables IX and X show regional differences in proportions married corresponding to the regional differences in family size of married women shown in Tables IV and V. We see that in all culture groups proportions married are highest in the Prairies and British Columbia. At the period in question these provinces were centres of immigration, internal as well as external, and had a surplus of unmarried males. Thus, high marriage rates in these provinces and high marriage rates among the foreign-born, both British and European, resident in British Columbia and the Prairies, are two aspects of an economic situation propitious to immigration. There are a few minor variations in regional differences. The rural-city difference is least in the Maritimes, as would be expected, while the educational difference is most marked in Ontario and the Maritimes and least so in the Prairies and Quebec.

Table IX. REGIONAL DIFFERENCES IN PROPORTIONS MARRIED

(i) French Mother Tongue Roman Catholic, English Mother Tongue Roman Catholic, English Mother Tongue Protestant - Education, urbanization.
Percentage ever-married among women aged 45 - 54 years.

	French Mother Tongue		English Mother Tongue			
	Roman Catholic		Roman Catholic		Protestant	
	Rural	City	Rural	City	Rural	City
	Born Farm	Born Non-farm	Born Farm	Born Non-farm	Born Farm	Born Non-farm
	%	%	%	%	%	%
0 - 8 years schooling						
Maritime Provinces.	91	83	87	81	92	91
Quebec.	94	88	88	80	90	86
Ontario	96	91	87	82	92	88
Prairie Provinces .	95	90	93	91	95	91
British Columbia. .	90	84	94	82	94	92
9 - 12 years schooling						
Maritime Provinces.	84	67	85	70	91	78
Quebec.	88	76	85	71	88	75
Ontario	87	80	83	72	90	79
Prairie Provinces .	84	81	89	82	94	86
British Columbia. .	81	72	85	81	92	87

Grand Means

Maritime Provinces . .	83
Quebec	84
Ontario.	86
Prairie Provinces. . .	89
British Columbia . . .	86

Table XI. CULTURAL DIFFERENCES IN TOTAL FERTILITY

Canadian born - Religion, Urbanization, Education, Mother Tongue.
Average number of children ever-born to all women 45-54 years of age.

	French Mother Tongue		European Mother Tongue		English Mother Tongue	
	Roman Catholic	Protestant	Roman Catholic	Protestant	Roman Catholic	Protestant
0 - 8 years schooling -						
Rural	7.63	5.36	6.56	5.32	4.91	3.71
City	4.91	3.94	4.17	2.89	3.27	2.55
9 - 12 years schooling -						
Rural	6.06	3.38	3.41	3.35	3.94	2.91
City	3.39	2.36	2.14	2.19	2.21	1.75
13 years schooling and over						
Rural	3.95	2.64	1.33	2.96	2.53	2.19
City	2.33	1.15	2.83	1.73	1.51	1.28

Grand Means

French mother tongue	3.925	0 - 8 years schooling	4.602
European mother tongue	3.240	9 - 12 years schooling	3,091
English mother tongue	2.730	13 years schooling and over	2.202
Roman Catholic	3.727	Rural	4.008
Protestant	2.870	City	2.589
		All	3.298

Table XII. CULTURAL DIFFERENCES IN TOTAL FERTILITY

European-born and British-born - Religion, education, urbanisation. Average number of children ever-born to all women aged 45-54 years.

	European-born		British-born	
	Roman Catholic	Protestant	Roman Catholic	Protestant
0 - 8 years schooling				
Rural	6.17	5.23	4.48	3.57
City	4.34	3.43	3.31	2.67
9 - 12 years schooling				
Rural	4.16	3.81	3.33	2.99
City	3.05	2.21	2.69	2.27
13 years schooling and over				
Rural	2.49	2.78	2.48	2.39
City	1.75	1.63	2.42	1.78

(c) Age at Marriage

The first bulletin in this series showed size of family by age at marriage and demonstrated the great difference in size of family between those marrying early and those marrying late. The data of this study have not been broken down by age at marriage but we have for each group the percentage of women marrying under 25. This gives a clue to the early and late marrying groups. In addition, size of family by age at marriage has been tabulated for a few selected groups.

Table XIII shows percentages of married women marrying for the first time under 25 years in most of the groups previously mentioned. When compared with proportions married in the same groups, we see that late marriage is in general associated with high proportions of unmarried, but there are some variations in emphasis. The difference between city and rural parts is small. The many unmarried in the cities may be the result of migration to those places where the opportunities of gainful employment are greatest, while for the native female population of the cities, there are no more, or perhaps even fewer, obstacles to early marriage than in the country. In the advanced education group, on the other hand, fewer married are associated with very late marriage.

Of the two immigrant groups, the European group marry young, but the British-born later. Their respective marriage-ages reflect differences in economic status and marriage habits in the countries of origin. Among the Canadian-born, the French-Catholics at the primary educational level marry young, while the large numbers marrying late among all English-speaking Catholics are particularly striking.

Family size by age at marriage was tabulated for six culture groups, chosen

Table XIII. AGE AT MARRIAGE. CULTURE GROUPS

Percentage who married for the first time under 25 years among married women aged 45-54 years.

	Canadian-born						British-born		European-born	
	French Mother Tongue		English Mother Tongue		European Mother Tongue		English Mother Tongue		European Mother Tongue	
	Roman Catholic	Protestant	Roman Catholic	Protestant	Roman Catholic	Protestant	Roman Catholic	Protestant	Roman Catholic	Protestant
	%	%	%	%	%	%	%	%	%	%
0 - 8 years schooling										
Rural - born farm . . .	78	76	59	70	78	75	60	60	86	76
born non-farm .	77	71	68	75	73	69	62	62	84	74
City - born farm . . .	72	71	62	69	75	68	52	58	82	73
born non-farm .	70	76	66	69	76	66	61	63	81	73
9 - 12 years schooling										
Rural - born farm . . .	68	75	46	58	-	60	56	52	67	63
born non-farm .	64	70	56	59	-	59	56	56	60	58
City - born farm . . .	64	71	48	55	-	62	48	51	74	54
born non-farm .	61	66	55	56	-	55	54	58	68	60
13 years schooling and over										
Rural - born farm . . .	59	43	31	38	-	-	-	49	-	62
born non-farm .	61	67	35	42	-	-	-	43	-	53
City - born farm . . .	60	67	39	39	-	-	-	46	-	38
born non-farm .	54	59	46	41	-	-	-	50	-	46

mainly to show the effect of educational differences. The groups are: - 0-8 years schooling:- 1. French mother tongue Roman Catholic, born non-farm, Verdun: 2. English mother tongue Protestant, born farm, British Columbia, rural: 3. English mother tongue Roman Catholic, born non-farm, Toronto. 13 years schooling and over:- 4. French mother tongue Roman Catholic, born non-farm, Montreal: 5. English mother tongue Roman Catholic, born non-farm, Toronto: 6. English mother tongue Protestant, born farm, Ontario, rural. The entire female population so defined in the age-group 45-54 years is included. Figures 4 and 5 show numbers of children by age at marriage and cumulative percentages married at given ages. They can be compared with Figures 4, 17 and 18 in Bulletin F-1. The populations show some local variations and random peculiarities but these do not obscure the relative importance of delayed marriage and differences in family size at similar marriage ages. Figure 4 also shows in parallel bars the total mean size of family and a standardized mean size of family. The latter is the family size which would result if all groups had married at the same ages as the British Columbia rural women, the earliest marrying group in this particular set.

We see that the differences in family size run in about the same order when age at marriage is standardized, but the range of differences is reduced. The principal change is that within the 13 years schooling group the low fertility of Ontario rural English Protestants is primarily due to delayed marriage. Within the 0-8 years schooling group the big difference between the French Roman Catholic group and the others is due to higher specific fertility rates, since proportions marrying at different ages are about the same as in the British Columbia rural group. On the other hand, the Toronto English Roman Catholic fertility is reduced somewhat by delayed marriage. The educational difference is primarily one of lower specific fertility rates, though it is intensified by delayed marriage.

Early marriages in the British Columbia group mentioned in the last two paragraphs suggest comparison with the differences in age at marriage shown in Bulletin F-1. Emphasis was laid there on differences associated with educational level and these have been amply confirmed in the present study as have also the differences associated with birthplace. On the other hand, the higher median age at marriage of the total Protestant population as compared with the total Roman Catholic appears to be a reflection of larger numbers of the former living in cities and at higher educational levels. Late marriage ages in British Columbia and Prince Edward Island are also the result of cultural differences. Among all the English-speaking groups, British Columbia has, along with the Prairies, the highest proportions married under 25 years. Proportions married under 25 years in Prince Edward Island are less than in the other two Maritime Provinces but more than in Quebec and Ontario. The high proportion of British-born in British Columbia and of English-speaking Catholics in Prince Edward Island would both help to explain the late marriage ages of these provinces taken as a whole.

5. CHILDLESS MARRIAGES AND DISTRIBUTION OF FAMILY SIZES

(a) Childless Marriages

Differences in the proportion of women reporting no children follow in general the same lines as differences in size of family. Birthplace differences are rather more marked. Among both British and foreign-born women, there are fewer childless, although the size of family is slightly smaller. Table XIV shows per-

Figure 4

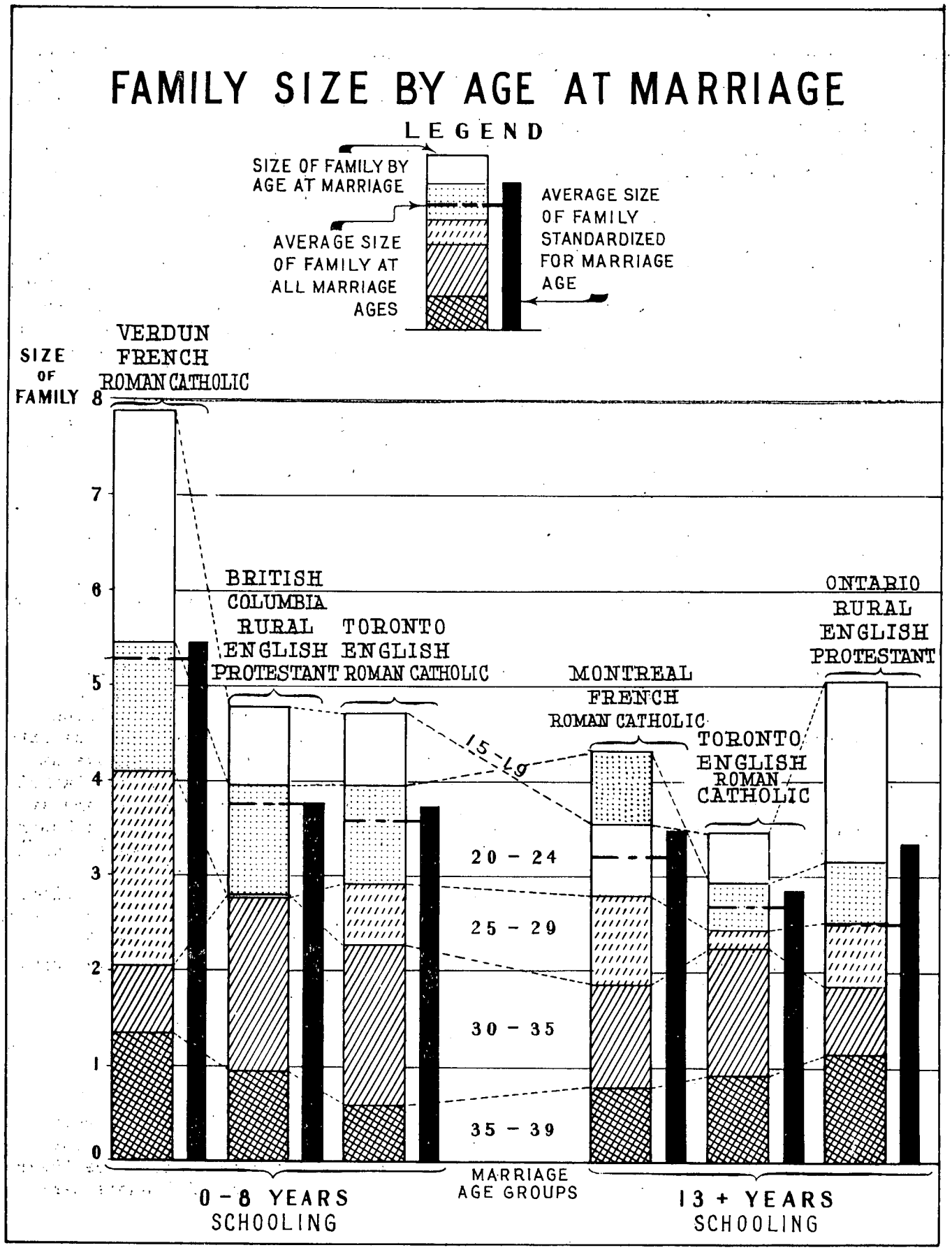
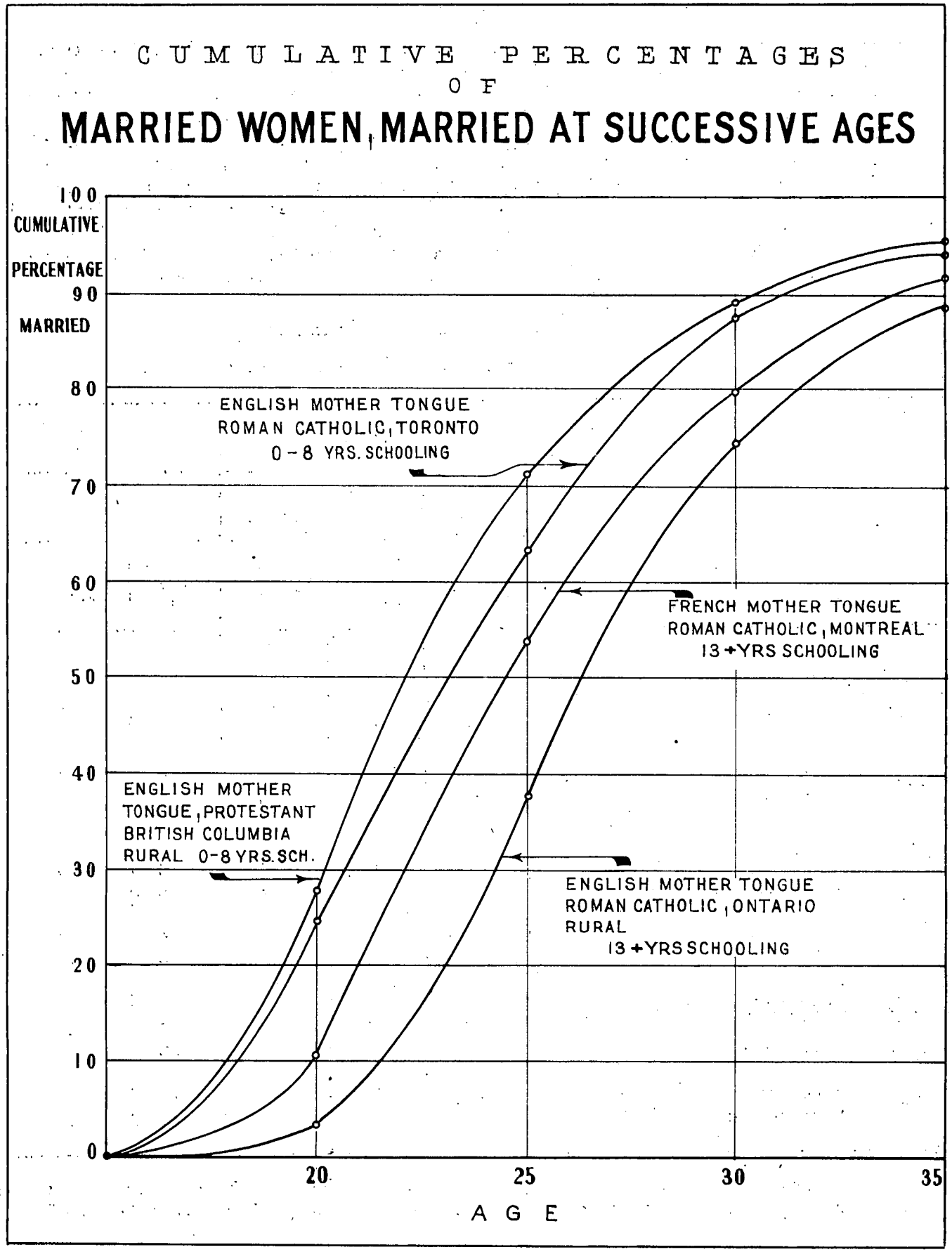

FAMILY SIZE BY AGE AT MARRIAGE
LEGEND
SIZE OF FAMILY BY AGE AT MARRIAGE
AVERAGE SIZE OF FAMILY AT ALL MARRIAGE AGES
AVERAGE SIZE OF FAMILY STANDARDIZED FOR MARRIAGE AGE
SIZE OF FAMILY
VERDUN FRENCH ROMAN CATHOLIC
BRITISH COLUMBIA RURAL ENGLISH PROTESTANT
TORONTO ENGLISH ROMAN CATHOLIC
MONTREAL FRENCH ROMAN CATHOLIC
TORONTO ENGLISH ROMAN CATHOLIC
ONTARIO RURAL ENGLISH PROTESTANT
15 - 19
20 - 24
25 - 29
30 - 35
35 - 39
MARRIAGE AGE GROUPS
0 - 8 YEARS SCHOOLING
13 + YEARS SCHOOLING

Figure 5


CUMULATIVE PERCENTAGES
OF
MARRIED WOMEN, MARRIED AT SUCCESSIVE AGES
100
CUMULATIVE
PERCENTAGE
90
MARRIED
80
70
60
50
40
30
20
10
0
ENGLISH MOTHER TONGUE
ROMAN CATHOLIC, TORONTO
0 - 8 YRS. SCHOOLING
FRENCH MOTHER TONGUE
ROMAN CATHOLIC, MONTREAL
13 + YRS SCHOOLING
ENGLISH MOTHER
TONGUE, PROTESTANT
BRITISH COLUMBIA
RURAL 0-8 YRS. SCH.
ENGLISH MOTHER TONGUE
ROMAN CATHOLIC, ONTARIO
RURAL
13 + YRS SCHOOLING
20
25
30
35
A G E

centages childless for the population groups of Table III. As in the latter table, groups have been combined. On account of the small numbers in one cell, the figure shown in brackets is an interpolated value. The educational difference in proportions childless is the most marked and next the rural-city difference. Both of these, and that associated with religion follow the same lines as differences in size of family. The differences between mother tongue groups are small, but show some novel features. There are remarkably few childless women in the foreign-language groups with 0 - 12 years schooling. In the advanced education groups this distinction is lost, so that, as with size of family, educational differences in percentage childless are most pronounced among those with foreign mother tongue. There is no significant difference between the French and English mother tongue groups.

Table XIV. PERCENTAGES CHILDLESS - CULTURE GROUPS

Percentage of married women aged 45-54 years with no children

	Canadian-born				Canadian and Foreign-born	
	French Mother Tongue		English Mother Tongue		European Mother Tongue	
	Roman Catholic	Protestant	Roman Catholic	Protestant	Roman Catholic	Protestant
	%	%	%	%	%	%
0 - 8 years schooling						
Rural - born farm	7	8	11	10	4	6
born non-farm	10	13	13	11	6	8
City - born farm	12	14	13	15	7	10
born non-farm	13	15	14	15	8	14
9 - 12 years schooling						
Rural - born farm	10	18	14	13	6	9
born non-farm	13	10	17	17	15	13
City - born farm	14	24	17	17	14	13
born non-farm	16	25	18	19	13	19
13 years schooling and over						
Rural - born farm	16	14	12	19	24	13
born non-farm	19	17	22	19	22	33
City - born farm	16	(23)	25	22	20	28
born non-farm	22	35	20	19	24	26

Bulletin F-1 showed that proportions childless are highly correlated with age at marriage, even more so than size of family. Without going into details of

the intricate relationship between these three variables, one or two aspects may be noted. Over the field of Table XIV, percentage childless appears highly correlated with size of family. The partial regression coefficient associated with age at marriage is very small and the effect of this variable is concealed. When two contrasting culture types, Roman Catholic French mother tongue, Protestant English mother tongue, etc., are considered separately, interesting differences in pattern emerge. The regression equations indicate that the proportions childless among the French Catholic groups vary according to age at marriage but are the same at different fertility levels when age at marriage is held constant. English Protestant groups, on the other hand, vary according to fertility level rather than age at marriage. This is an abstract way of stating the position since in actuality size of family and age at marriage are in general varying together. We can best interpret these cultural differences by saying that in similar situations as regards educational level, urban residence and age at marriage the number of childless women among both French Catholics and English Protestants will be about the same, but the size of family of fertile women will be smaller among the latter.

Some of the local variations in percentage childless are of interest. Though explanations will not be attempted, they are recorded as pointers towards further research. Perhaps the most striking is the rarity of childless married women in the rural parts of the Prairies. Foreign-born women show this most strongly but all other groups almost equally so. Among Canadian-born women with foreign mother tongue at all educational levels, less than 5 per cent had no children. In all other culture groups except those with 13 years or more schooling the proportion is less than 10 per cent. In contrast, the highest proportions childless are found in Montreal and Toronto, where they are generally between 20 per cent and 30 per cent. The highest proportion childless recorded among groups large enough for a rate to be computed was 30 per cent for Protestant European mother tongue, 9 - 12 years schooling, in Montreal.

(b) Distribution of family sizes

Analysis of group means in earlier sections has been set against a background of estimated individual variability. The range of individual variation can be shown more explicitly for some of the regional groups studied in section 3.(c). Fig. 6 shows distributions for Quebec and Ontario groups from Table IV. Figs. 7 and 8 illustrate Tables V and VI. The charts can be compared with similar distributions for the whole of Quebec and Ontario shown in Figs. 11 - 16 of Bulletin F-1. The rural groups shown in the charts are the same as those in the tables, but in the case of the city groups, Montreal and Toronto, with somewhat lower fertility, represent the larger cities of their respective provinces. The mean size of family corresponding to each distribution is indicated on the charts.

Some of the characteristics of such distributions have been noted in an earlier bulletin. At this juncture they may serve as a useful corrective to a too simple view of cultural differences which may result from consideration of means alone. We see that, even if we neglect all sizes of family found in less than 1% of the population, the most fertile culture groups contain all sizes from 0 - 19 in appreciable numbers. There is thus scope for great individual variety. In the least fertile culture groups, the large families have disappeared, but there still remains a choice of sizes from 0 to 5 or 6. The influences at work can thus

Figure 6

DISTRIBUTION OF FAMILY SIZE

ROMAN CATHOLIC, FRENCH MOTHER TONGUE, QUEBEC

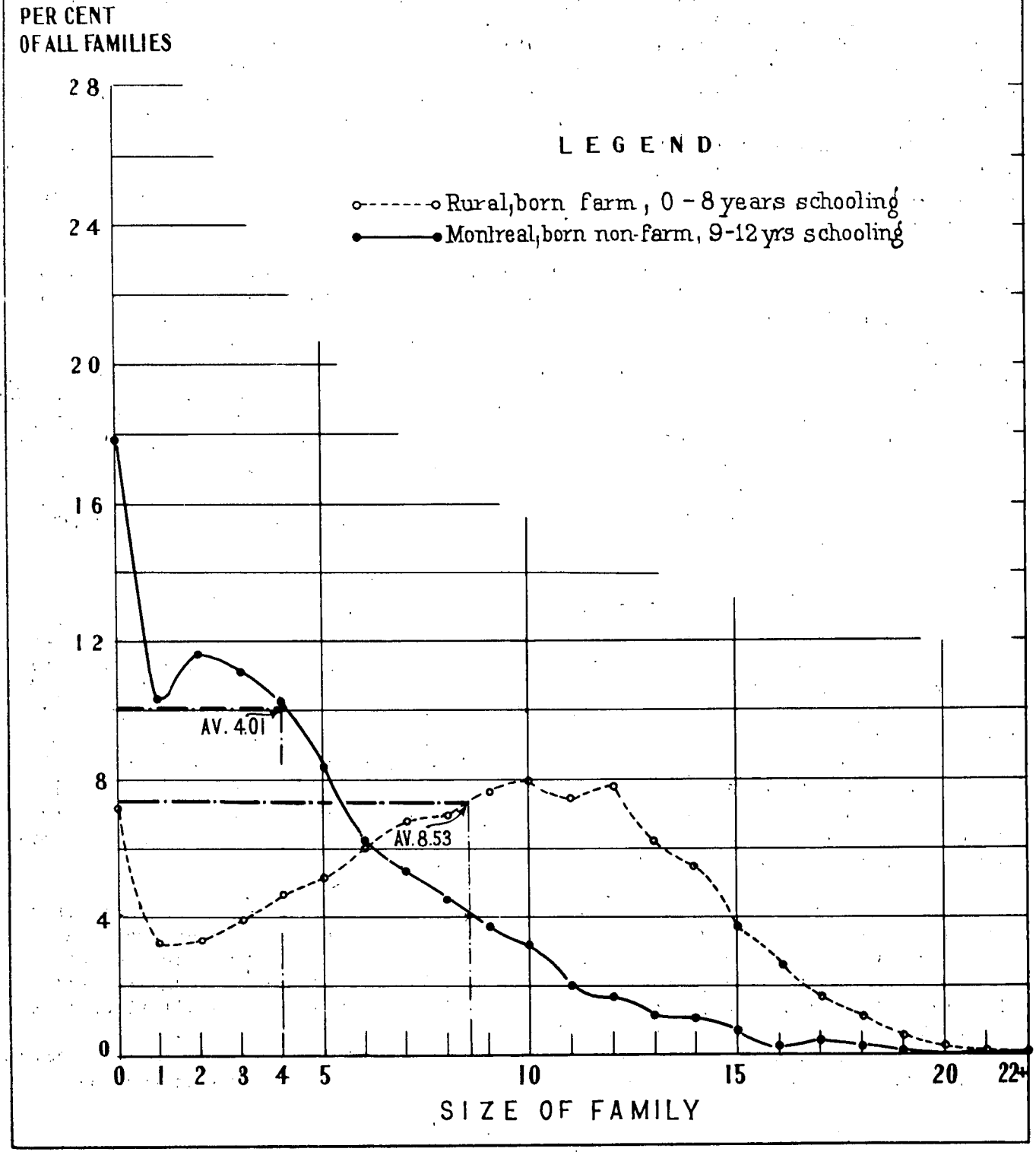


Figure 7

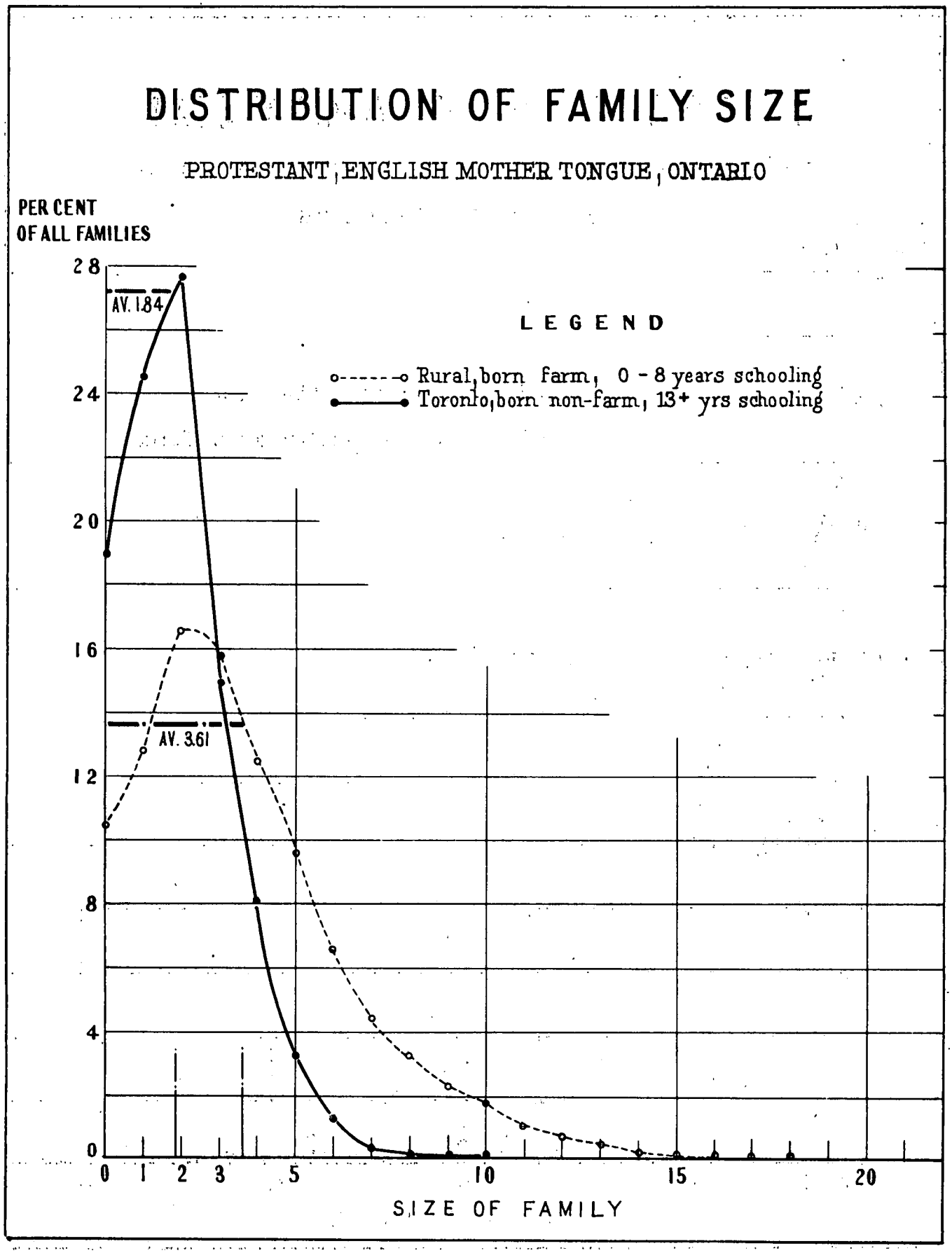
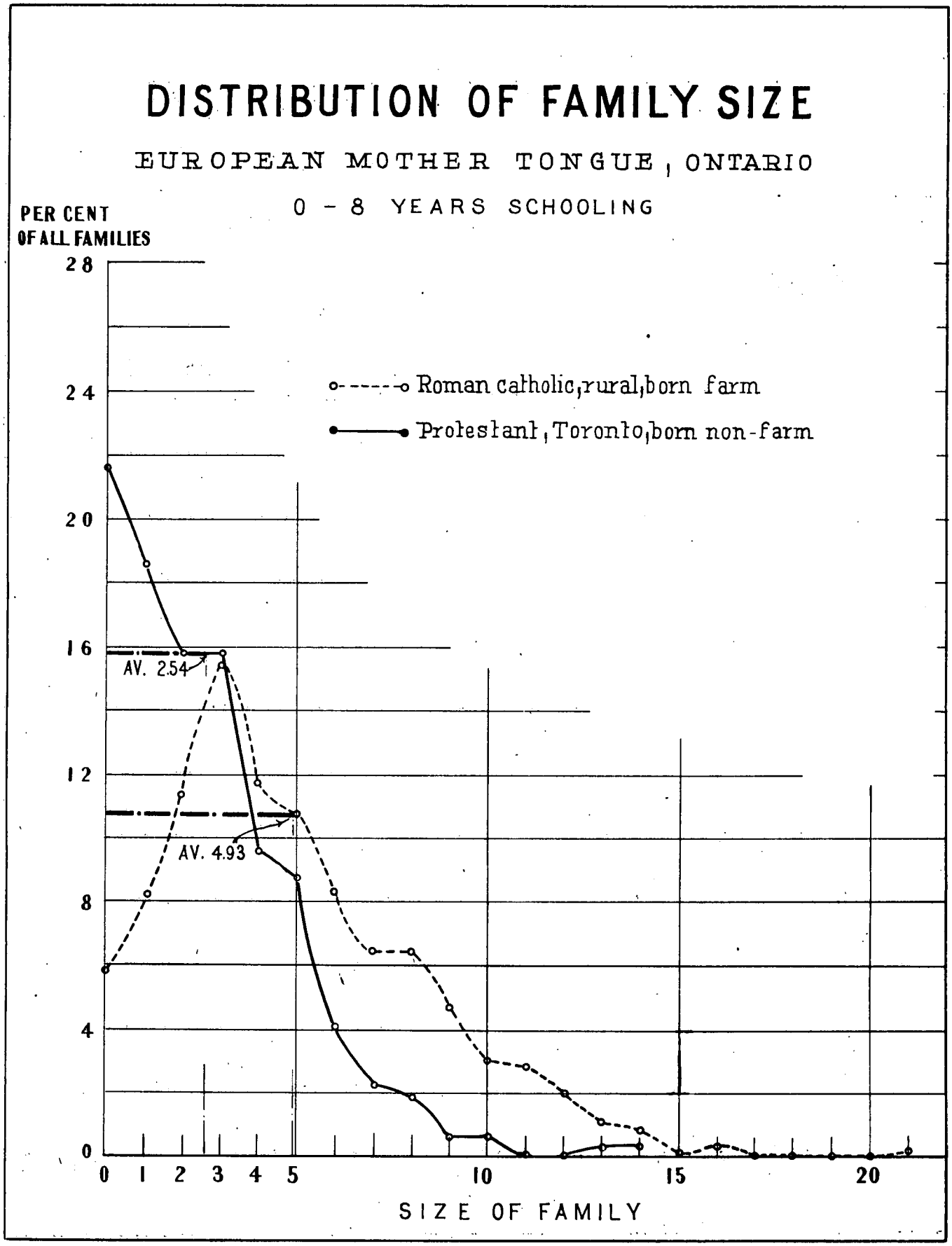

DISTRIBUTION OF FAMILY SIZE
PROTESTANT, ENGLISH MOTHER TONGUE, ONTARIO
PER CENT OF ALL FAMILIES
28
24
20
16
12
8
4
0
AV. 1.84
AV. 3.61
LEGEND
Rural, born farm, 0 - 8 years schooling
Toronto, born non-farm, 13+ yrs schooling
0 1 2 3 5 10 15 20
SIZE OF FAMILY

Figure 8


DISTRIBUTION OF FAMILY SIZE
EUROPEAN MOTHER TONGUE, ONTARIO
0 - 8 YEARS SCHOOLING
PER CENT OF ALL FAMILIES
28
24
20
16
12
8
4
0
Roman catholic, rural, born farm
Protestant, Toronto, born non-farm
AV. 2.54
AV. 4.93
0 1 2 3 4 5 10 15 20
SIZE OF FAMILY

affect individual women in very varying degrees. In spite of the uncertainty surrounding the actual modus operandi, the total effect is established without doubt, since even for quite small samples it is possible to predict within a small margin of error the number of families of different sizes in a population whose cultural and economic characteristics are known.

6. DESCRIPTION OF FOREIGN LANGUAGE GROUPS

The foreign language groups of Table VI are very heterogeneous, even in respect of the characteristics with which this study is mainly concerned. So, though it may prove to add little to the discussion of section 3 (iii), more detailed information about these groups is of general interest. Table XV shows individual mother tongues of the populations of Table VI. All these have 0 - 8 years schooling only. Nearly all the groups include a great variety of mother tongues but, for the sake of simplicity, only those spoken by at least 10 per cent of the population of the group are shown in Table XV. We see that in general the Roman Catholic and Protestant groups have different mother tongues. German mother tongue is prominent in both religions but relatively more so in the Protestant groups. There is a lesser degree of overlap in Italian and Magyar mother tongues. The largest mother tongue group is underlined in each case.

Languages also vary regionally. Among Roman Catholics, Ukrainian, Polish and Italian tongues are well represented throughout, but Italian is more common in Ontario, Quebec, British Columbia, and in cities rather than in the country, while Ukrainian predominates in the Prairies. Among Protestants, the Eastern provinces are more predominantly German-speaking and have also many Finnish-speaking persons, while the Prairies and British Columbia are mainly German and Scandinavian-speaking.

The Scandinavian mother tongues are shown separately in the table. Collectively they are important in all Protestant groups in the Prairies and British Columbia, where they form from 15 per cent to 40 per cent of the foreign language population. They are proportionately most strongly represented in British Columbia. These facts do not shed much light on the high Prairie rates of Table XI. Although the Prairies are linguistically distinct, the distinctions are quite different in character for Roman Catholics and Protestants.

The foreign-born are naturally in the majority in all foreign-language groups except for Quebec and Ontario Protestants, where there is a large native-born German-speaking group. Very few of the Ukrainian-speaking give the Ukraine as their birthplace. Their birthplaces were Poland, Russia (which may include the Ukraine), Austria, Czechoslovakia. The birthplaces of many of the German-speaking were Russia and other parts of Eastern Europe. So the birthplace of the foreign-born Catholics can be described as Eastern and Southern Europe and of the foreign-born Protestants as Northern and Eastern Europe.

The religious characteristics of the foreign-language groups are more obviously related to their relative fertility rates. Among the Protestants, the majority are either Lutheran or Mennonite. The proportions belonging to these two religions are greater in the country than in the cities. The cultural significance of the two is rather different. The Lutheran religion is the orthodox religion in the country of origin whereas the Mennonite religion is a minority belief wherever

(x)

Table XV. EUROPEAN MOTHER TONGUES

Populations of Table VI

	Ukrainian	Polish	Lithuanian	Flemish	Italian
	%	%	%	%	%
Roman Catholic Rural Born farm					
Quebec	23	29	13	-	-
Ontario	20	25	-	-	-
Prairie Provinces	52	18	-	-	-
British Columbia	16	14	-	-	20
Roman Catholic Rural Born non-farm					
Quebec	-	31	-	-	12
Ontario	16	18	-	14	19
Prairie Provinces	39	16	-	-	-
British Columbia	-	16	-	-	29
Roman Catholic Urban Born farm					
Quebec	21	21	16	-	29
Ontario	27	35	-	-	18
Prairie Provinces	59	22	-	-	-
British Columbia	10	24	-	-	33
Roman Catholic Urban Born non-farm					
Quebec	-	12	-	-	61
Ontario	15	21	-	-	42
Prairie Provinces	45	29	-	-	-
British Columbia	-	14	-	-	47
Protestant Rural Born farm					
Quebec	-	-	-	-	-
Ontario	-	-	-	-	-
Prairie Provinces	-	-	-	-	-
British Columbia	-	-	-	-	-
Protestant Rural Born non-farm					
Quebec	-	-	-	-	-
Ontario	-	-	-	-	-
Prairie Provinces	-	-	-	-	-
British Columbia	-	-	-	-	-
Protestant Urban Born farm					
Quebec	-	-	-	-	15
Ontario	-	-	-	-	-
Prairie Provinces	-	-	-	-	-
British Columbia	-	-	-	-	-
Protestant Urban Born non-farm					
Quebec	-	-	-	-	23
Ontario	-	-	-	-	-
Prairie Provinces	-	-	-	-	-
British Columbia	-	-	-	-	-

(x) Includes only those mother tongues spoken by 10 per cent or more of their respective populations.

(x)
Table XV. EUROPEAN MOTHER TONGUES

Populations of Table VI

German(≠)	Magyar	Slovak	Finnish	Swedish	Norwegian	Icelandic	Dutch(≠)	Russian
12	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-
-	19	-	-	-	-	-	-	-
-	12	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
75	-	-	-	-	-	-	-	-
59	-	-	22	-	-	-	-	-
48	-	-	-	-	10	-	11	-
25	-	-	10	16	10	-	-	26
36	-	-	29	-	-	-	-	-
39	-	-	25	-	-	-	-	-
41	-	-	-	12	12	-	-	-
-	-	-	-	-	-	-	-	-
-	11	11	19	-	-	-	-	-
57	-	-	30	-	-	-	-	-
49	-	-	-	-	-	10	-	-
14	-	-	11	25	20	-	-	-
16	-	-	11	-	-	-	-	-
41	-	-	17	-	-	-	-	-
44	-	-	-	11	-	11	-	-
11	-	-	11	19	23	-	-	-

(x) Includes only those mother tongues spoken by 10 per cent or more of their respective populations.

(≠) "German and "Dutch" often describe the same Teutonic dialect "Plattdeutsch".

found. It is then significant that the Mennonites are largely confined to the Prairies where their religion appears to act as an isolating influence. Among the Catholics the proportions of Greek Catholics are greater in the Prairies, again indicating the persistence of European traditions. Mormons and Doukhobors constitute negligible minorities in the groups of this study, except in the case of British Columbia rural farm-born Protestants, 0 - 8 years schooling, where Doukhobors form 22 per cent of the foreign-language population. (See Section 7(2)).

Since the numbers of foreign-language speaking persons at higher educational levels are so small, detailed discussion has been perforce confined to the elementary school age level, but in relation to section 3(b), it is of interest to note that the linguistic composition of the higher education groups differs somewhat from that of the primary group. The change is not very great among the Protestants. The largest groups with 13 years or more schooling are German and Scandinavian, as in the primary school groups, but there are relatively more Scandinavians with higher education, and a much smaller language group - the Dutch - is also well represented. Among the Roman Catholics, the linguistic composition changes completely. Among the few with 13 years or more schooling, the most frequent languages are, Flemish, German, and Dutch, in that order. The first and last of these three are very small minorities among the Roman Catholic primary school population. For Roman Catholic women 45-54 years old, especially with those of Slavonic or Italian mother tongues, the opportunities for advanced education were very slight, and in rural parts could be described as non-existent. For the foreign-born, this reflects conditions in the country of origin, but in as far as the small numbers permit of generalization, conditions do not seem to have been much better for the Canadian-born. The situation has probably changed greatly in recent years.

7. MINORITY RELIGIONS AND LANGUAGES

The general plan of the investigation developed in the foregoing sections aimed at studying, not religion, language, etc., alone, but the joint operation of several factors believed to influence family size. To carry this out broad groups had to be employed with fairly even representation over the whole field. Several interesting and numerically important cultural types were thus omitted from the main investigation. The present section presents supplementary data about some of these groups. Owing to limitations of time and labour the data are more fragmentary than would have been the case if a study of religions, etc., alone had been undertaken. A compensatory advantage is that the data obtained can be compared with the more comprehensive knowledge available for the larger culture groups. Excluded groups studied in this section comprise two religious groups, Greek Orthodox and Jewish, one language group, the Indian and Eskimo languages, and one combined religious and linguistic group, the Chinese and Japanese languages and religions. A fifth religious group, the Mormons, was not intentionally omitted but turned out to have been missed because all the women in the age group selected were born in the United States. Finally, two religious groups, Mennonites and Doukhobors, who were included in the main tables, have been studied as separate groups.

(a) Greek Orthodox Religion

Data for this group are complete and include all the population as defined in earlier sections, that is, excluding only United States-born and residents in incorporated places with less than 30,000 inhabitants. Those reporting English and

French mother tongues numbered only 20 and have been neglected. Table XVI shows average size of family of married women for the Greek Orthodox population reporting European mother tongue. Ukrainian mother tongue was the largest language group. Russian, Roumanian, Polish and other Eastern and Southern European tongues were well represented. A very small number of Canadian-born are included in the populations of Table XVI. Only 21 women had 13 years or more schooling. Their average size of family is shown but is subject to considerable sampling error.

Table XVI. GREEK ORTHODOX RELIGION. EUROPEAN MOTHER TONGUE

Average Number of Children ever-born to Married Women aged 45 - 54 years

	Rural		City	
0 - 8 years schooling	6.87		3.95	
Ontario		4.35		3.67
Prairie Provinces		7.19		4.31
9 - 12 years schooling	3.75		2.69	
13 years schooling and over (Rural and City)		2.10		

The average size of family of Greek Orthodox women can be compared with similar figures for Roman Catholic and Protestant women with European mother tongue shown in Table III. Rural women with 0 - 8 years schooling have larger families than either Roman Catholic or Protestant women in the same categories, but city women and those with more than elementary schooling fall between the two with a tendency towards the lower levels. The tendency already noted for educational differences to be strongly marked in the foreign-language groups is still more pronounced among Greek Orthodox and the rural-urban differences is also large. Comparison of the rates for Ontario and the Prairies with the regional rates of Table VI indicates that fertility of the European-speaking is still higher in the Prairies even when there are no religious distinctions between the different regions. The Greek Orthodox population is much more numerous in the Prairies than elsewhere and forms more compact settlements in that region.

Size of family of all women is not given because in this immigrant group there are almost no unmarried women. Among rural women with 0 - 8 years schooling 91 per cent were married under 25 years, the highest proportion hitherto found. Proportions marrying late increase with urbanization and more education but remain relatively low. The proportion of childless women, (4 per cent among rural women with elementary education), is very low and varies in the way previously noted. Among the small number with advanced education the proportion was 17 per cent.

(b) Jewish Religion

Though numerically important in Canada, the Jewish religion is not of great significance in relation to family size. There is considerable evidence from many countries that Jews have a low birth rate. They are mainly an urban people with an abnormal occupational distribution. They are strongly represented in the textile trades and in commerce, occupations characterized by very low fertility rates irrespective of the cultural composition of the persons engaged in them. An earlier paper(x) showed that, when occupational distribution is allowed for, recent fertility rates of persons of Jewish "racial origin" is about the same as those of British "racial origin" or perhaps a little higher. The present section gives family data for Jewish(ƒ) women in the selected age-group resident in Montreal city and Outremont. There are large numbers of Jews in both places and the rates obtained probably exhibit the lowest Jewish fertility reached in Canada.

Table XVII shows family size of married women, percentage married, etc., for Jewish women sub-classified by mother tongue and by birthplace. Since the numbers in some categories are very small, the size of the group is shown in the table. Owing to the large sampling errors involved, not much weight can be attached to the figures for single small groups, but something can be said about the general run of the data. Among Jewish women, a birthplace distinction seems to be more important than that between mother tongues. The European-born, mainly Yiddish-speaking, have larger families than the Canadian and British-born, both Yiddish and English-speaking. Below the Jewish rates are shown two comparable groups also resident in Montreal and Outremont; (a) English-speaking Protestants and (b) Canadian and foreign-born Protestants with European mother tongue. In the primary school groups, the foreign-born Jews resemble closely the foreign-language Protestants, while the Canadian and British-born, whether English or Yiddish-speaking, approximate to the English-speaking Protestants. Possibly among the Canadian and British-born, the statement of Yiddish mother tongue indicates Jewish sentiment rather than the actual use of this language in the home. In any event, Yiddish does not appear to be associated with the survival of European traditions of larger families in the same way as other European home languages. While the other educational groups are still on about the same fertility level as the comparable groups (a) and (b), there are indications that the educational gradient is less steep among the Jewish women.

The figures for percentage married, etc., show some interesting features. There are fewer spinsters among the Jewish women, both Canadian and foreign-born. There are also fewer late marriages and fewer childless women. The impression derived from the Jewish data is that a standard pattern prevails to a greater extent than in other groups. The typical Jewish girl marries between 20 and 24 and has from two to four children. There are relatively fewer deviations in the directions of very early or late marriage, no children, or very many children. One small point is perhaps worthy of record. Among the foreign-born, 8 per cent of those reporting mother tongue other than Yiddish were farm-born and 5 per cent of those reporting Yiddish mother tongue.

(x) Charles, "Differential Fertility in Canada, 1931". Can. Journ. Econom & Pol Sci. Vol. 9, No. 2, May, 1943, Page 204.

(ƒ) In this report the terms Jew and Jewish are used to describe members of the Jewish religion and in no other sense.

Table XVII. JEWISH RELIGION - MONTREAL AND OUTREMONT - AND COMPARATIVE PROTESTANT RATES

Women aged 45 - 54 years

	Per cent of Women Married	Number of Married Women	Average Size of Family, Married Women	Per cent Age at Marriage under 25 years	Per cent Childless of Married Women
	%	No.		%	%
0 - 8 years schooling					
1. English Mother Tongue, born non-farm Canadian and British-born.	91	42	2.71	76	17
2. Yiddish Mother Tongue, born non-farm Canadian and British-born.	93	114	2.88	88	5
3. Yiddish Mother Tongue European-born.	99	2,382	3.53	83	7
4. Other European Mother Tongue European-born.	97	113	3.40	79	4
(a) Protestant English Mother Tongue, born non-farm	85	1,269	2.91	57	15
(b) Protestant European Mother Tongue, born farm and non-farm Canadian and foreign-born . . .	90	294	3.50	68	17
9 - 12 years schooling					
1. English Mother Tongue, born non-farm Canadian and British-born.	79	77	2.18	74	17
2. Yiddish Mother Tongue, born non-farm Canadian and British-born.	91	70	2.53	73	13
3. Yiddish Mother Tongue European-born.	97	256	3.02	83	5
4. Other European Mother Tongue European-born.	93	40	1.98	60	12
(a) Protestant English Mother Tongue, born non-farm.	74	1,421	1.91	50	23
(b) Protestant European Mother Tongue, born farm and non-farm Canadian and foreign-born . . .	89	65	2.05	51	28
13 years schooling and over					
1. English Mother Tongue, born non-farm Canadian and British-born.	81	13	1.46	69	38
2. Yiddish Mother Tongue, born non-farm Canadian and British-born.	76	13	2.08	77	15
3. Yiddish Mother Tongue European-born.	98	40	2.98	80	5
4. Other European Mother Tongue European-born.	80	4	2.25	75	25
(a) Protestant English Mother Tongue, born non-farm	79	312	1.37	28	24
(b) Protestant European Mother Tongue, born farm and non-farm Canadian and foreign-born . . .	88	15	.73	27	60

(c) Indian Mother Tongue

Several definitions of "Indian" are current. One which is of some cultural significance distinguishes between reserve Indians and those not on reserves. The former group nearly coincides with that of Indians who are wards of the Government. Those outside reserves include a few unenfranchised Indians and a more ambiguous class of Indians as defined by the Census. In line with the rest of the investigation, this section is confined to persons reporting an Indian mother tongue. All in the locality observed were either Roman Catholic or Protestant in religion. Indians, however defined, are found in all provinces. They are most numerous in Ontario. The next largest group is in British Columbia, where they form a much larger proportion of the rural population. The British Columbia rural women reporting an Indian mother tongue were therefore chosen for tabulation. The average number of children ever-born to 384 Roman Catholic women was 5.50 and to 225 Protestant women 5.20, a very small difference compared with those previously found. Out of the total number of women, 67 per cent had no schooling while only 3 per cent had more than 8 years and none more than 12 years. Since the educational level is so different from that of other groups, size of family was computed separately for 0 years schooling, 1 - 4 years, 4 - 6 years, 7 - 8 years and 9 years and over. No significant differences in size of family were found between these educational groups. The proportion married was 95 per cent, most were married at early ages, and 10 per cent of the married women were childless.

There is some reason to think that enumeration of size of family may have been less accurate among the Indian women than elsewhere. Registration of births is known to be much less accurate and for similar reasons dead children or children living with relatives may have been omitted. If the figures are taken at their face value, the size of family is about the same as among European language Protestants at the primary school level living in rural districts. The proportion married is also about the same but the number of childless married women is rather higher than in other comparable rural groups.

(d) Japanese and Chinese Languages and Religions

Japanese and Chinese immigrants into Canada are usually sharply distinguished from the rest of the population by three cultural variables, Asiatic birthplace, Asiatic mother tongue, and an Asiatic religion. Assimilation can proceed in several stages; (a) retention of all three Asiatic characteristics, (b) (i) Asiatic birthplace and language with European religion, (ii) Canadian birthplace with Asiatic languages and religions, (c) (i) Canadian birthplace and European religion with Asiatic mother tongue. Theoretically we should find (c) (ii) Canadian birthplace and mother tongue with Asiatic religion but the age-group studied contained only one individual answering to this description and that probably a European convert to Buddhism. The first, third and fourth of these stages are common to all immigrant groups but the second is either peculiar to Asiatics or else more easily detected. The religion of the home land is discarded before the mother tongue. This fact accounts for the scarcity of individuals in the fifth stage. In theory again, there is a final stage of assimilation in which individuals whose parents were Asiatic-born can be identified either by nativity of parents or by physical peculiarities. Of these two marks of identification, the former was not recorded at the 1941 Census and the latter have never been recorded at any Census. In practice the question does not arise since no such individuals would be found in the

age-group with which we are concerned.

Speedy change of religion mentioned seems to have had little effect on family patterns. When size of family of those with Asiatic and European religions respectively, and with the same birthplaces and mother tongues is compared, the Roman Catholic and Protestant families are usually slightly larger than the Confucian and Buddhist families, but the difference is probably not significant. There is, as we should expect, a marked difference between the Asiatic-born and the Canadian-born. Still more marked is the difference between Japanese-speaking and Chinese-speaking. Table XVIII gives average family size for Asiatics resident in British Columbia rural districts, and in Vancouver and Victoria. The Chinese-born who were mostly resident in Vancouver and Victoria show a higher fertility than any other city group in this study. The Japanese-born on the other hand, are at the same level of fertility as the European mother tongue groups. In Vancouver and Victoria their families are somewhat larger than those of any other group so far identified in those cities, but the size of family of rural married women is not exceptionally high. With one exception, all the women referred to in this section were married.

Table XVIII. CHINESE AND JAPANESE MOTHER TONGUE, FOREIGN AND CANADIAN-BORN

	Chinese Mother Tongue		Japanese Mother Tongue	
	No. of married women	Average size of family of married women	No. of married women	Average size of family of married women
Asiatic born	115	6.50	847	4.45
Canadian born. . . .	19	3.74	8	2.75

The Canadian-born and Chinese-born are too few in number to permit of further subdivision. The Japanese-born, in addition to being more numerous, have a larger proportion of women above the primary school level, and are more equally distributed between city and country. Table XIX shows the Japanese-born women in greater detail. There is no obvious difference between rural and city families. There are indications of an educational gradient, though the difference between educational levels appears to be considerably less than in groups previously described.

Table XIX. JAPANESE-BORN, URBANIZATION AND EDUCATION

	Vancouver and Victoria		British Columbia, rural	
	No. of married women	Average size of family of married women	No. of married women	Average size of family of married women
0 - 8 years schooling. . . .	283	4.25	432	4.72
9 - 12 years schooling . . .	81	4.30	31	3.90
13 years schooling and over.	13	3.08	7	2.86

(e) Mennonites, Doukhobors, and Mormons

In this section are discussed three minority Protestant sects whose family attitudes are likely to be of special interest. Mormons, Mennonites, and Doukhobors possess some characteristics in common. Conflict with the state and consequent persecution prompted migration. Mennonites and Doukhobors sought a land where they would be free from the obligation to military service, Mormons wished to evade the consequences of polygamy. Each sect was strongly sectarian and endeavoured to maintain its own way of life uncontaminated by the world. Their subsequent history in Canada has been one of more or less gradual penetration by the outside world and consequent modification of behaviour patterns. The Mormons abandoned polygamy in 1890, and since then have had no occasion to come into open conflict with governments. The Mennonites have accepted a satisfactory compromise. Though Doukhobors still come into conflict with the law on occasion, these incidents appear to be largely confined to one extreme sub-sect.

All these minority groups have played an important role in opening up the West. While all have proved in the main efficient agriculturists, there seem to be significant differences in type of adaptation. The Mennonites and Doukhobors tend to cling to the simpler ways of life of their past. The resulting self-sufficiency was an asset in helping them to weather the agricultural depression of the thirties but they have remained at a lower level of pecuniary culture than most of their neighbours. The mormon culture, on the other hand, was profoundly affected by the need for irrigation in their first permanent home in the United States, and they have as a result been in the forefront of advances in knowledge and in scientific technology.

Some form of primitive communism was the chosen way of life in these as in many other sectarian religious groups, and was not out of harmony with the co-operative ways of living without which settlement on the frontier would have been impossible. As they became surrounded by a fully developed capitalist economy, their own economy came to resemble that generally prevailing. The Doukhobors are perhaps nearest to an equality of poverty. While the Mormons have adapted themselves most successfully to current standards, traces of their more consciously co-operative beginning are seen in the highly organized social activities of the Mormon church.

Table XX gives the average size of family of married women among selected populations of Mennonites and Doukhobors. All the rural Mennonite population of Saskatchewan is shown and all the rural Doukhobor population of Saskatchewan and British Columbia as defined in this article. The Doukhobors are largely concentrated in the two provinces shown, while the Mennonites are more widely distributed. Both are predominantly rural. Only two Doukhobor females in this age group had more than 8 years schooling and so the table records only family size of those with less than 9 years schooling.

The Mennonite families, as one would expect from their way of life and ideology, are very large. The Canadian-born shows as large a size of family as any found in this study. The European-born are somewhat smaller. As suggested earlier, a possible explanation of this fact is that the Canadian-born have maintained greater isolation from the general population. The Doukhobors in this age group arrived in Canada later than the Mennonites and so are all foreign-born. In view

Table XX. MENNONITES AND DOUKHOBORS

Number of Married Women aged 45-54 years, and Average Number of children ever-born

	0 - 8 years schooling				9 - 12 years schooling	
	Canadian-born		European-born		All birthplaces	
	No. of married women	Average size of family	No. of married women	Average size of family	No. of married women	Average size of family
A. Mennonites						
Saskatchewan rural . .	375	8.35	347	6.52	28	5.93
B. Doukhobors						
Saskatchewan rural . .	-	-	313	4.73	-	-
British Columbia rural	-	-	217	4.00	-	-

of their self-sufficient economy, lack of material wants, and cultural isolation, the size of family shown is very surprising. In the past their religious beliefs have involved objections to all forms of government registration and this has led to considerable difficulty in the collection of vital statistics and in Census enumeration. In British Columbia, educational level was not given for 25 women with an average family size of 4.40, while neither education nor number of children was recorded for 67 women. The possibility that there has been systematic under-enumeration of children born among the Doukhobors cannot be dismissed but examination of the Census schedules for 1941 and 1931 disclosed no evidence of it. Where the population of a single schedule is mixed, the larger families of Greek Catholic and Greek Orthodox leap to the eye. The distribution of family size is also remarkable for its low variability. Two-thirds of all the married women have families of 3, 4 or 5 children.

A first glance at Mormon families proved so interesting that the scope of the investigation was extended outside limits previously laid down. Nearly all are resident in Alberta but many are United States-born and a large number live in the smaller towns and villages such as Cardston, Lethbridge, Raymond. Table XXI shows all the Mormon women 45-54 years of age in Alberta without distinction of birthplace, classified according to residence, rural incorporated places 1,000 - 29,000, cities 30,000 and over (Calgary and Edmonton), as well as education level. All have English as their mother tongue.

Though there is some indication of a rural-urban difference in the Mormon population, it is much smaller than usual, so that, while the rural family size is a normal one, the urban family is exceptionally large. The most significant feature of the Mormon table is the negligible size of the educational differential. On the evidence of Table XXI alone, one would be justified in saying that there is no significant difference in size of family between those with advanced education and those with less. But since the difference, though so small, is in the same direction as those previously found in all other groups, it is probably significant. Even so, the Mormon culture is remarkable in this respect.

Table XXI. ALBERTA MORMONS

Number of Married Women aged 45-54 years and Average Size of Family

	Rural		Town		City		All	
	No. of married women	Average size of family	No. of married women	Average size of family	No. of married women	Average size of family	No. of married women	Average size of family
0-8 years schooling	139	5.72	103	5.74	18	5.00	260	5.68
9-12 years schooling	124	6.19	123	5.39	6	4.83	253	5.53
13 years schooling and over.	18	6.50	-(x)	-	-	-	35	5.40

The result indicated above is not an unexpected one since the state of Utah shows characteristics which differ from the general run of the States. Following a universal pattern, on the whole the States with the highest fertility have been the poorest and those with least cultural development according to currently accepted standards. In 1920 Utah and Idaho ranked 5th and 10th respectively among the States of the Union in net replacement index. According to a cultural-intellectual index they ranked 17th and 18th, while the other States among the ten most fertile ranked from 36th to 48th in cultural development.

In view of the disastrously small families of highly educated men and women, it is possible that further investigation of the Mormon culture and economy might yield results of general interest. A preliminary tentative suggestion emerges from the earlier beliefs associated with the practice of polygamy. This practice seems to have been justified on the grounds that the most prosperous and efficient individuals had a duty to raise large families and to give them all possible advantages of health and education. While the practice of polygamy has been abandoned, there may still remain a tendency to direct economic advantages into family channels which shows itself both in the general high level of education and in the large families of the more prosperous and better educated.

8. NUMERICAL DISTRIBUTION OF CULTURAL CHARACTERISTICS

Hitherto the groups into which the female population has been classified have been treated as separate entities. The geographical distribution and the numerical strength of the primary culture groups in country and city and at different educational levels has been referred to only incidentally. In the present section these points will be amplified. The local distribution of religions, mother tongue, etc., is given in other Census bulletins. Table XXII shows how the population of rural districts and cities is made up in respect of groups classified both by religion and mother tongue. The localisation of some of the religion-mother tongue groups

(x) Entries omitted to avoid disclosing particulars of an individual family.

has already been referred to in section 3(e), where it was seen to be associated with regional differences in size of family. The table shows the concentration of French-speaking Catholics in Quebec and the rural parts of the Maritimes (mainly New Brunswick). When the Canadian-born and British-born English-speaking Protestants are combined, British Columbia is seen to be the most predominantly English-speaking Protestant region. English-speaking Catholics are important only in the Maritimes and there chiefly in the towns.

Table XXII. REGIONAL DISTRIBUTIONS OF RELIGION-MOTHER-TONGUE GROUPS

Women aged 45-54 years

	All	Canadian-born				Canadian and Foreign-born		British-born	
		French Mother Tongue		English Mother Tongue		European Mother Tongue			
		Roman Catholic	Protestant	Roman Catholic	Protestant	Roman Catholic	Protestant	Roman Catholic	Protestant
	%	%	%	%	%	%	%	%	%
Rural									
Maritime Provinces. . .	100	19.1	0.1	12.2	63.2	0.3	0.5	0.4	4.2
Quebec	100	88.8	0.3	2.6	6.5	0.2	0.2	0.2	1.2
Ontario. . . .	100	7.4	0.2	6.6	64.9	4.0	5.5	0.5	10.9
Prairie Provinces. . . .	100	5.0	0.1	1.7	29.4	19.0	22.2	1.0	21.7
British Columbia. . .	100	1.2	0.1	2.7	29.8	5.2	12.6	2.0	46.5
City									
Maritime Provinces. . . .	100	3.8	0.2	29.7	57.5	0.2	0.2	1.7	6.7
Quebec	100	70.1	0.5	6.0	8.6	2.7	0.7	1.7	9.6
Ontario. . . .	100	4.6	0.2	9.0	46.4	4.1	2.4	2.1	31.2
Prairie Provinces. . . .	100	1.8	0.2	3.7	36.0	9.7	7.4	2.0	39.2
British Columbia. . .	100	0.8	0.1	3.2	35.3	2.3	4.1	2.7	51.6

Table XXIII shows how the religion-mother tongue groups are distributed between rural parts and cities and between the different educational levels. It should be remembered that there have been great changes in educational facilities during the past thirty years, so that Table XXIII does not represent the current educational standing of the different regions. European mother tongue groups are predominantly rural and at the primary education level. The distributions shown in the table are relevant to the interpretation of some of the differences in family size previously noted. Since educational level is in part an index of occupation and income differences, greater diffusion of advanced education suggests

that the economic level of the primary school groups may be on the whole higher than that of groups where very few attain advanced education. We have already seen that educational differences in fertility are most pronounced in the latter instance. Similarly, the predominantly rural character of the European language groups indicates that they were at this time well isolated from urban patterns of living.

Table XXIII. RURAL-CITY AND EDUCATIONAL DISTRIBUTION OF RELIGION-MOTHER TONGUE GROUPS

Women aged 45 - 54 years

	Rural & City	Rural				City			
		Years schooling				Years schooling			
	All	0-8	9-12	13 -	All	0-8	9-12	13 -	All
	%	%	%	%	%	%	%	%	%
French Mother Tongue -									
Roman Catholic . . .	100	39.3	9.8	0.7	49.8	32.8	15.8	1.6	50.2
Protestant	100	29.5	7.8	1.8	39.1	40.2	17.4	3.3	60.9
English Mother Tongue - Canadian-born -									
Roman Catholic . . .	100	25.7	11.7	1.4	38.8	28.0	27.8	5.4	61.2
Protestant	100	33.8	18.0	2.5	54.3	17.6	22.1	6.0	45.7
European Mother Tongue -									
Roman Catholic . . .	100	56.9	2.5	0.2	59.6	37.6	2.4	0.3	40.3
Protestant	100	69.0	5.5	0.5	75.0	20.0	4.3	0.7	25.0
English Mother Tongue - British-born -									
Roman Catholic . . .	100	10.9	10.4	1.7	23.0	37.4	34.3	5.3	77.0
Protestant	100	13.7	15.8	2.1	31.6	26.8	36.6	5.0	68.4

9. CONCLUSION

In conclusion we may try to draw together some of the main threads to show how they illustrate the development of the small family pattern. Two principal centres of high fertility have emerged, rural French-speaking Catholics in Quebec and New Brunswick and the European language groups in the Prairies. The French Catholic culture can be traced without break to the seventeenth century(x). It is easy to see how large families became established under conditions of unlimited room for expansion and under the auspices of a religion which set a high value on family life. In later years both language and religion combined to maintain intact a closed culture. As we have seen, the family attitudes associated with this culture complex have been greatly modified in three directions, first, by residence in cities, second, by breaking up of compact settlements as the people spread out into other parts of Canada, and third, to a somewhat smaller degree by higher education and its associated higher

(x) Vide Sabagh "The Fertility of the French-Canadian Women during the Seventeenth Century". Am. Journ. Soc. Vol. XLVII, No. 5

social and pecuniary status. At the period of this study the traditional French Canadian family was seen only in rural populations living in a comparatively primitive economy. The seventeenth century family could still be found in the parts of Quebec and New Brunswick most remote from large cities. It finally disappeared only during the last thirty years. The persistence of the French Canadian family is based primarily on a traditional agriculture and secondarily on closeness of settlement. The latter feature is perhaps seen in the high fertility of the predominantly French-Canadian cities. The economic characteristics of these cities may, however, provide an alternative explanation. The transitional character of family behaviour is seen in the wide and rather inexplicable variations in urban fertility of French Catholic towns.

The Prairies, likewise, provided conditions propitious to large families. High fertility rates were found in all culture groups but more especially in the European language speaking groups, who brought with them a large-family tradition rooted in the peasant agriculture of Southern and Eastern Europe and not dissimilar from the French-Canadian. Decline in the size of the family was retarded by the barriers of language and often by sectarian religions. Since their language habits were more incompatible with social and economic advancement than those of the French-speaking differences in size of family associated with educational differences were abrupt and the subsequent decline in fertility speedy.

During the period of this study high fertility among the English-speaking groups was found in the Maritimes and these provinces have in recent years shown a slower decline in fertility. Barriers of language and religion have never been so prominent in the Maritimes as in the more economically advanced regions. Perhaps as a result of the equality of poverty they have not been intensified to the same degree by class conflicts.(x) So in the Maritimes smaller primary cultural differences at a high level of fertility are associated with lower money incomes and the absence of a metropolitan city. Though Halifax and Saint John are large cities they are rather different from the streamlined cities of the West, and perhaps less effective as centres of ostentatious expenditure.

Everywhere in Canada, English-speaking Protestant families tend to be small, and are especially so in the provinces of Ontario and British Columbia, where they are in the majority. For the most part such people trace their origins from a highly industrialised country, and the varieties of religion most popular have proved especially adapted to reinforce the values of an acquisitive society. The primary social heritage associated with differences in language and religion still leads to different family attitudes. Not only is the size of family different in apparently similar circumstances, but the social heritage affects the ease of entry into the more typically acquisitive pursuits. Although these cultural differences exist and are likely to persist for some time, they are not as large as a superficial view suggests. The most significant result obtained has been the similarity of response of all cultures to higher standards of living and a greater variety of material wants. The ultimate reproductive destiny of all appears to be the same. In Vancouver, the most metropolitan city of Canada, the obliteration of all cultural difference at a level of fertility insufficient to maintain a stationary population has been nearly reached. The social heritage operates as a time factor

(x) Vide Everett C. Hughes. "French Canada in Transition". Chicago, 1943.

determining the stage of development of family attitudes. The basic problem of population policy is independent of all such transitory cultural time lags. We have yet to discover how to exploit to the full the resources of scientific technology without at the same time committing ourselves to sterility and a declining population.

10. SUMMARY

(i) The average size of family of married women 45-54 years old showed significant differences associated with religion, urbanization, educational level, and mother tongue. Difference in size of family between those born on farms and not born on farms, though also significant, was smaller in amount and less clear-cut.

(ii) When differences in religion, residence, education and mother tongue were equalised, no significant difference in size of family of married women was found between Canadian-born and foreign-born.

(iii) French-speaking Catholic families in rural districts and with primary education only were larger than would have been expected from the effect of mother tongue and religion acting independently.

(iv) The rural-city difference in size of family was most marked among French-speaking groups, the educational difference most marked among those with European mother tongue. All differences were smallest among English-speaking Protestants.

(v) French Catholic size of family was largest in Quebec and New Brunswick, while the size of family of those with European mother tongue was largest in the Prairie Provinces. The Maritime Provinces and British Columbia both showed a levelling-out of cultural differences, the former at a high level of fertility, the latter at the lowest level found.

(vi) High proportions of married women were found among the foreign-born groups and also among French Protestants. Among the different regions, the Prairies and British Columbia showed highest proportions married. There were more spinsters among Roman Catholics than among Protestants. Otherwise differences in proportions married followed the same lines as differences in fertility of married women. The most conspicuous feature was the very large proportion of spinsters among women with advanced education.

(vii) Late age at marriage was in general associated with many unmarried, but the rural-city difference was small while the educational difference in age at marriage was great.

(viii) Among the minority religions and languages observed, the size of family was very large among Mennonites and among city women born in China. Greek Orthodox religion, Indian mother tongue, and Japanese birth were associated with a size of family similar to that of Roman Catholics with European mother tongue. Women reporting the Jewish religion were at the same fertility level as English-speaking Protestants. Doukhobor women showed a size of family unexpectedly small in view of their rural residence and either few years' schooling or none. Mormon women were remarkable in that they showed less difference in size of family associated with educational level than any other group observed.

APPENDIX A

Table I A.

Analysis of Variance - European Mother Tongue and Birthplace

(Data of Table I.)

Source of variation	Sum of squares	Degrees of freedom	Mean square Variance
(a) Factors			
1. Education.	34.4537	2	17.2268
2. Urbanization	16.0661	1	16.0661
3. Religion	4.0194	1	4,0194
4. Born farm.	3.7576	1	3.7576
5. Birthplace	.9436	1	.9436
(b) Interactions between two factors			
1. Urbanization - Born farm . .	1.5230	1	1.5230
2. Religion - Birthplace. . . .	.7626	1	.7626
3. - 10		12	
(c) Residual interactions.	8.5276	27	.3158
(d) Estimate of within class error .		37,438	1.4036

F's (within class error)

$$F = \frac{(a)\ 1.}{(d)} = 12.273 > 6.91 \simeq P = .001$$

$$F = \frac{(a)\ 2.}{(d)} = 11.446 > 10.83 \simeq P = .001$$

$$F = \frac{(a)\ 3.}{(d)} = 2.864 < 3.84 \simeq P = .05$$

Table III A.

Analysis of Variance - Religion, Urbanization, Education, Mother Tongue, Farm Birthplace

(Data of Table III)

Source of variation	Sum of squares	Degrees of freedom	Mean square variance
(a) Factors			
1. Religion	29.4784	1	29.4784
2. Urbanization	26.2691	1	26.2691
3. Education	47.5003	2	23.7502
4. Mother tongue	23.2050	2	11.6025
5. Farm birthplace	6.5945	1	6.5945
(b) Interactions between two factors			
1. Religion - Mother Tongue	12.4101	2	6.2050
2. Urbanization - Farm Birthplace	1.3696	1	1.3696
3. Religion - Urbanization	.7792	1	.7792
4. Education - Urbanization	.7506	2	.3753
5. Mother Tongue - Education	1.4456	4	.3614
6. - 10.		9	
(c) Residual interactions	6.4912	45	.1442
(d) Estimate of within class error		251,957	.2125

$F = \frac{(a)\ 1.}{(d)} = 138.722 > 10.83 \simeq P = .001$

$F = \frac{(a)\ 2.}{(d)} = 123.619 > 10.83 \simeq P = .001$

$F = \frac{(a)\ 3.}{(d)} = 111.766 > 6.91 \simeq P = .001$

$F = \frac{(a)\ 4.}{(d)} = 54.600 > 6.91 \simeq P = .001$

$F = \frac{(a)\ 5.}{(d)} = 31.033 > 10.83 \simeq P = .001$

$F = \frac{(b)\ 1.}{(d)} = 29.200 > 6.91 \simeq P = .001$

$F = \frac{(b)\ 2.}{(d)} = 6.445 > 3.84 \simeq P = .05$

$F = \frac{(b)\ 3.}{(d)} = 3.667 < 3.84 \simeq P = .05$

Table IV A.

Analysis of Variance - Regional Differences in Fertility (i)

(Data of Table IV)

Source of variation	Sum of squares	Degrees of freedom	Mean square variance
(a) Factors			
1. Rural born farm vs. city, born non farm	50.858	1	50.858
2. Culture groups	60.290	2	30.145
3. Education	12,659	1	12,659
4. Regions	16.430	4	4.107
(b) Interactions between two factors			
1. Urbanization - Culture groups	4.963	2	2.482
2. Regions - Culture groups	8.750	8	1.094
3. Regions - Urbanization	1.870	4	.467
4. Regions - Education	1.103	4	.276
5. Culture groups - Education	.368	2	.184
6. Education - Urbanization	.096	1	.096
(c) Residual interactions	3.036	30	.101
(d) Estimate of within class error		159,505	.087

$F = \frac{(a)\ 1.}{(d)} = 583.698 > 10.83 \simeq P = .001$

$F = \frac{(a)\ 2.}{(d)} = 345.977 > 6.91 \simeq P = .001$

$F = \frac{(a)\ 3.}{(d)} = 145.291 > 4.62 \simeq P = .001$

$F = \frac{(a)\ 4.}{(d)} = 47.141 > 10.83 \simeq P = .001$

$F = \frac{(b)\ 1.}{(d)} = 28.480 > 6.91 \simeq P = .001$

$F = \frac{(b)\ 2.}{(d)} = 12.554 > 3.27 \simeq P = .001$

$F = \frac{(b)\ 3.}{(d)} = 5.359 > 4.62 \simeq P = .001$

$F = \frac{(b)\ 4.}{(d)} = 3.164 > 2.37 \simeq P = .05$

$F = \frac{(b)\ 5.}{(d)} = 2.113 < 2.99 \simeq P = .05$

Table V A.

Analysis of Variance - Regional Differences in Fertility (ii)

(Data of Table V)

Source of variation	Sum of squares	Degrees of freedom	Mean square variance
(a) Factors			
1. Education.	21.126	2	10.563
2. Urbanization	9.472	1	9.472
3. Regions.	6.378	4	1.595
4. Farm birthplace.	.739	1	.739
(b) Interactions between two factors			
1. Education - Urbanization	.472	2	.236
2. Regions - Education.	1.238	8	.155
3. Regions - Urbanization	.424	4	.106
4. Education - Farm birthplace. . .	.147	2	.074
5. Regions - Farm birthplace. . . .	.107	4	.027
6. Urbanization - Farm birthplace .	.017	1	.017
(c) Residual interactions.	.900	30	.030

$F = \frac{(a)\ 1.}{(c)} = 352.093 > 8.77 \simeq P = .001$

$F = \frac{(a)\ 2.}{(c)} = 315.733 > 13.29 \simeq P = .001$

$F = \frac{(a)\ 3.}{(c)} = 53.153 > 6.12 \simeq P = .001$

$F = \frac{(a)\ 4.}{(c)} = 24.643 > 13.29 \simeq P = .001$

$F = \frac{(b)\ 1.}{(c)} = 7.863 > 5.39 \simeq P = .01$

$F = \frac{(b)\ 2.}{(c)} = 5.167 > 4.58 \simeq P = .001$

$F = \frac{(b)\ 3.}{(c)} = 3.533 > 2.69 \simeq P = .05$

$F = \frac{(b)\ 4.}{(c)} = 2.467 < 3.32 \simeq P = .05$

Table VI A.

Analysis of Variance - Regional Differences in Fertility (iii)

(Data of Table VI)

Source of variation	Sum of squares	Degrees of freedom	Mean square variance
(a) Factors			
1. Religion.	5.396	1	5.396
2. Urbanization.	4.883	1	4.883
3. Regions	9.212	3	3.071
4. Born farm	2.464	1	2.464
(b) Interactions between two factors			
1. Regions - Urbanization.	4.615	3	1.538
2. Urbanization - Farm birthplace.	1.140	1	1.140
3. Regions - Religion.	.923	3	.308
4. Religion - Farm birthplace. . .	.281	1	.281
5. Regions - Farm birthplace . . .	.226	3	.075
6. Religion - Urbanization	.008	1	.008
(c) Residual Interactions	1.451	13	.112
(d) Estimate of within class error. . .		35,288	.091

$F = \frac{(a)\ 1.}{(d)} = 59.292 > 10.83 \simeq P = .001$

$F = \frac{(a)\ 2.}{(d)} = 53.657 > 10.83 \simeq P = .001$

$F = \frac{(a)\ 3.}{(d)} = 33,744 > 5.42 \simeq P = .001$

$F = \frac{(a)\ 4.}{(d)} = 27.079 > 10.83 \simeq P = .001$

$F = \frac{(b)\ 1.}{(d)} = 16.904 > 5.42 \simeq P = .001$

$F = \frac{(b)\ 2.}{(d)} = 12.527 > 10.83 \simeq P = .001$

$F = \frac{(b)\ 3.}{(d)} = 3.379 > 2.60 \simeq P = .05$

$F = \frac{(b)\ 4.}{(d)} = 3.090 < 3.84 \simeq P = .05$

Table XI A.

Analysis of Variance - Total Fertility of Canadian-born - Education, Urbanization, Religion, Mother Tongue

(Data of Table XI)

Source of variation	Sum of squares	Degrees of freedom	Mean square variance
(a) Factors			
1. Urbanization.	18.1192	1	18.1192
2. Education	35.3110	2	17.6555
3. Religion.	6.6094	1	6.6049
4. Mother tongue	8.6294	2	4.3147
(b) Interactions between two factors			
1. Religion - Mother tongue. . .	2.4746	2	1.2373
2. Education - Urbanization. . .	2.0667	2	1.0333
3. Education - Mother tongue . .	2.1481	4	.5370
4. - 6.		5	
(c) Residual interactions	5.1623	16	.3226

$F = \frac{(a)\ 1.}{(c)} = 56.166 > 16.12 \cong P = .001$

$F = \frac{(a)\ 2.}{(c)} = 54.729 > 10.97 \cong P = .001$

$F = \frac{(a)\ 3.}{(c)} = 20.474 > 16.12 \cong P = .001$

$F = \frac{(a)\ 4.}{(c)} = 13.375 > 10.97 \cong P = .001$

$F = \frac{(b)\ 1.}{(c)} = 3.835 > 3.63 \cong P = .05$

$F = \frac{(b)\ 2.}{(c)} = 3.203 < 3.63 \cong P = .05$

APPENDIX B.

List of the religious denominations as described in the Census included under the rubric "Protestant" in this report.

Adventists
Anglicans
Apostolic Brethren
Baptists
Brethren
Christadelphian
Christians
Christian Missionary Alliance
Church of Christ
Church of God
Disciples
Doukhobors
Evangelical Association
Friends
Gospel People
Holiness Movement
International Bible Students
Lutherans
Mennonites
Methodist, African
Methodist, Free
Mission
Moravian
Mormons
Non-denominational
Pentecostal
Plymouth Brethren
Presbyterians
Protestants
Reformed Church
Salvation Army
United Brethren
United Church
Unitarians