

PAPER VII.—THE CENSUS OF 1861.

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(Read before the Society, March 2nd, 1864.)

UPON the appearance of the first volume of the Census of Canada, I undertook an examination of it, with a view of ascertaining whether I could extract from it any useful results with respect to the vital statistics of this country; and especially with relation to the natural increase of the two sections of the Province. Before commencing the work, I had reason to entertain serious doubts as to the trustworthiness of the figures with which I had to deal, and at each successive step of the investigation, I only became the more convinced, that some of the figures given were manifestly wrong, and that much caution must be exercised in assuming the truth of anything that was to be found there. This was not a very satisfactory basis upon which to found any conclusions, and, in point of fact, I found that a large amount of rather laborious calculations had been entirely thrown away, from the evident worthlessness of the foundation on which they had been based. I persevered, however, because it is only from a minute analysis that any judgment can be formed of the extent to which some portions of the work may be relied upon; and I am induced to offer this paper to the Society, partly with the object of showing what results may be considered as at least approximately correct, and partly to warn others from wasting as much time as I have done on those parts which can do nothing but mislead.

It may be desirable, as a preliminary, to explain the nature of the work performed by the enumerators. In their lists the name

of each individual in a family is given, with columns to shew whether male or female, married or single, and with a column for the age next birth day. There are also columns to shew the number of births and deaths during the preceding year, and the age at which death occurred; and this is all that relates to vital statistics, or to that portion of the subject which we are examining. Now, it would appear probable *a priori*, that with ordinary care, the facts then and there present, viz.: everything relating to the persons living at the time, would be given correctly enough. I do not think that there is any reason to doubt the numbers living, the proportion of males and females, and of married and single, very nearly representing the true state of the population; and the ages would, probably, be not very far wrong, though there is much more doubt upon this subject. Many persons do not know their ages with accuracy, and many may have purposely misstated them. The tendency to guess at the age, and to call it the nearest round number, is forcibly illustrated in the Census of the State of New York, for 1855, by a diagram which shews the immense preponderance of ages stated as 35, 40, 45, &c., over all other ages. But when past facts are recorded, as the births and deaths which occurred perhaps many months before, we could hardly look for the same accuracy, and one would expect the births and deaths to be considerably understated. An error of this kind is not by any means peculiar to the Census of Canada. By the Census of the State of New York, for 1855, the total deaths recorded are 46,297, which gives a percentage on the population of 1.36, a suspiciously low rate; but in the same year, whilst the Census gave the deaths in the City of New York at 11,022, the city registers recorded 23,042. If we merely correct the manifest error in the city, the general rate would become 1.74, but if we suppose the omissions there to be a test of what they were in other parts of the State, it would be as high as 2.84; the true amount is probably intermediate between the two. A very striking illustration of the omissions which are likely to be made of facts, which occurred some time before the taking of the Census, is furnished by the United States Census of 1860. The deaths are there classified according

to the months in which they fell, and whilst it is notorious from the U. S. army returns, and from the records of Massachusetts, Rhode Island, and other places where regular registers are kept, that August and September are the most fatal months, and that May gives rise to fewer deaths than any other month except June, in the Census returns, by far the largest number is recorded to have occurred in May. The reason is obvious—the Census is taken on May 31st, and the recent deaths are given probably not very inaccurately, whilst a large number of the earlier ones are forgotten. Upon this subject the superintendent of the Census remarks, in rather more poetical language than one is accustomed to find in a statistical return, that “even as the eye perceives the nearer objects in a landscape more fully and distinctly than the remote, so the recollection of past events has a similar recession, which is subject to laws.” He proposes a correction from the army returns, viz. : to assume the first quarter as correct, and to add 6 per cent. for the second quarter, 46 for the third, and 58 for the fourth, which must be acknowledged to be rather a singular *law* of lapse of memory. This correction would bring the United States deaths up from 1.27, as given in the Census, to 1.56 ; but, without putting too much faith in any law of mnemonic perspective, it would appear more natural to assume the number given in May as correct, and to increase the whole number, in the proportion which the deaths in May by the registers bear to the whole. As thus rectified the deaths would be 1.79 per cent. But it would appear that even this is not enough, for the superintendent refers with approbation to an elaborate calculation by Mr. Meech, the exact nature of which is not stated, by which he estimates the deaths during the last fifty years to have averaged 2.2 on the population. From these facts it is evident, that with every care by the enumerators, no reliance can be placed upon the returns of deaths as given for a whole year, and that if any data upon this important subject are desired, we must establish a general system of local registration.

Very nearly the same difficulties exist with regard to the recording of births, but with this difference, that, whereas the returns of

deaths cannot be corrected, except within very large limits of error, the real amount of births can be approximately recovered, if the Census as to ages be tolerably accurate. In 1851, a column of births was given, and also a column of numbers living under one year, the former being manifestly incorrect, because the returns, from one end of the country to the other, showed a larger number living, than were said to have been born. The number living under one at the end of the year is evidently that of the survivors of those born during the year, and if the deaths under one had occurred with equal frequency in each month of the ages of the children, we should have to add on the average, one half of the number of deaths to the number living, to make up the births; but as a greater number die in the earlier months we should have to add rather more. Taking the New York Census as a guide, where the numbers dying for the first year are given from three months to three months, we should add nearly two-thirds of the deaths under one year. The births in Canada in 1851 would, upon this principle, be about 80,200 instead of 69,420, as given in the Census.

In 1861, in order to avoid this evident anomaly, I suppose, the column of births, as returned by the enumerators, and which was clearly very imperfect, was omitted altogether; but by some singular confusion of ideas, the number living under one was headed "births." I have examined some of the enumerators schedules, and this appears to have been the course adopted in the Census office, but there is no one now left in the department who was engaged in the work, and I have not been able to ascertain the fact precisely; it is certain, however, that the column headed births is added up in the total population, as if it had been the number living under one. Assuming this to be the case, and proceeding as before, the corrected births in Lower Canada would be 43,264 instead of 40,788, and increasing those in Upper Canada in the same proportion, they would be 56,406 instead of 53,178, showing the percentage on the population respectively of 3.892 and 4.031.

The manifest imperfection of the returns, as they stand, will become evident from the following table, shewing the rates of births

and deaths to the whole population from the returns of other countries :

	Births.	Deaths.	Annual Increase.
Lower Canada, 1861.....	3.672	1.174	2.498
do. do. as corrected.....	3.892		
Upper Canada, 1861.....	3.809	.731	3.178
do. do. as corrected.....	4.031		
New York, 1855.....		1.36	
do. do. approximately corrected.....	3.078	2.300	.778
United States, 1860.....		1.27	
do. do. corrected.....		2.20	
Great Britain, 1859 to 1861.....	3.465	2.163	1.302
Russia in Europe, 1859.....	4.335	3.485	.850
Poland, 1840 to 1857.....	4.102	3.571	.531
Finland, 1857.....	3.503	3.251	.252
Sweden, 1851 to 1855.....	3.107	2.117	.990
Norway, 1851 to 1855.....	3.235	1.722	1.513
Denmark, 1850 to 1859.....	3.811	2.196	.928
Bavaria, 1852 to 1857.....	3.342	2.884	.458
Saxony, 1855 to 1858.....	3.993	2.965	1.028
Prussia, 1855 to 1858.....	3.831	2.928	.903
Holland, 1855 and 1856.....	3.184	2.536	.648
Belgium, 1840 to 1851.....		.245	

The rates per cent. of births in Canada, do not differ so materially from those of other countries, as to lead us to infer that they are seriously misstated; and as I have corrected them by the deaths under one, they are probably not far from the truth, through from the imperfection of the returns of deaths, they will be somewhat understated. But it is impossible to believe the rate of mortality, even if we had not other reasons for doubting it, to be even approximately correct. In connection with this subject, moreover, we encounter another source of error, the extent of which it is very difficult to estimate. We have seen in what particulars the information given to the enumerators was likely to be faulty; there is also some opening for further misstatements, from carelessness on their part in recording in their schedules the returns made to them; but, as far as the vital statistics are concerned, the forms are so simple, that I have no doubt the schedules are substantially correct. These schedules were then submitted to the Census clerks, who distributed the matter into a great variety of columns; a kind of work, which, unless a perfect system of

checking be established, is always liable to produce errors. I am afraid, however, that there was no uniform system, under the inspection of a responsible head, and it is rumoured, I know not with what truth, that when the details did not correspond with the totals, from which they were distributed, the correspondence was arbitrarily forced, or, as the expression goes, the figures were cooked. If this was so, the operators shewed themselves very indifferent cooks, for numerous discrepancies still remain. I have not examined the details to any great extent, but, for the purposes of my investigation, I classified the counties of Lower Canada according to the French element of the population, and took out the ages and deaths of each class separately. I naturally checked my work, by comparing my totals after the new distribution, with those given in the tables, and I found numerous discrepancies. When I could discover no error in my own figures, I added up the columns as printed, and the result has been most materially to shake my confidence in the accuracy of the Census clerks. There were not above half a dozen errors in the additions of the columns of ages, but in the cross additions of the deaths by counties, out of sixty-five columns, of which the table consists, I found twenty-seven to be wrong. The difference between the total deaths as given, and the real total of all the details, is not very great, being respectively 12,928 and 13,103; but this is only because the individual errors balance each other. In some of the counties the difference is very great; thus in Lévis, the total of deaths is given as 142, but the details at the several ages add up to 205. As far as this particular question of the number of deaths is concerned, these errors are of little importance, because the figures, whichever way you take them, are evidently worthless, but they lead one to look with considerable suspicion upon other parts of the table, the ages for instance, where a similar distribution of the enumerators' returns has been made by the Census clerks.

I have given below a comparative table of several different countries, shewing the proportions per cent. living at different ages:

PERCENTAGE OF POPULATION AT DIFFERENT AGES.

	Canada, 1852.	L. C., 1861.	U. C., 1861.	N. Y.	Great Britain.	Belgium.	Norway.	Denmark
Under 5.....	18.23	16.731	17.731	13.69	13.08	11.64	13.526	12.882
5—10.....	13.77	13.593	12.783	11.37	11.70	10.91	11.402	10.723
10—15.....	12.18	12.421	12.160	10.81	10.73	9.77	9.997	9.947
15—20.....	11.87	11.828	11.515	10.36	9.89	8.99	8.554	9.501
20—30.....	16.97	16.806	17.660	19.87	17.46	16.62	17.423	16.187
30—40.....	10.86	10.476	11.330	14.06	13.09	13.52	13.557	14.283
40—50.....	7.34	7.365	7.745	9.08	9.82	11.80	8.758	10.355
50—60.....	5.43	5.127	4.736	5.47	6.89	7.81	7.805	8.182
60—70.....	2.41	3.244	2.667	3.11	4.51	5.49	5.690	5.010
Over 70.....	1.28	1.850	1.339	1.71	2.83	3.45	3.289	2.925
Unknown.....		.558	.335	.47				
Under 20.....	56.05	54.573	54.189	46.23	45.40	41.31	43.479	43.053
20—50.....	35.17	34.647	36.735	43.01	40.37	41.94	39.738	40.828
Over 50.....	9.12	10.221	8.742	10.29	14.23	16.75	16.784	16.117

In spite of the marked difference which there is between Canada and all the other countries, in the distribution of the population as to ages, there is such a close resemblance between the Censuses of 1851 and 1861, as to lead to the inference that we have here a real characteristic of our vital statistics. It can only be very partially owing to immigration, for the State of New York, which is similarly affected in this respect, exhibits a very different law of population. It may be interesting to enquire what effect immigration would have upon the classification by ages. The immigration returns of the United States for the last fifty years, shew that immigrants of all ages arrive in the country, and that there is a great uniformity in the proportions at different ages in successive years. Considerably more than one-half of any importation would have no sensible effect upon such a table, as it would only add to the total numbers, without disturbing the relative proportions; and of the remaining part, the effect would be in round numbers, that 10 per cent. of the immigrants would increase the numbers between 15 and 20; 25 per cent. those from 20 and 30; and 10 per cent. those between 30 and 40. But as the whole annual immigration of late years, even in Upper Canada, has apparently rarely exceeded from 1 to 2 per cent. of the population, the numbers

between 20 and 30, where the effect is the greatest, would not be very materially altered. When, however, the immigration has continued for many years, what disturbance there was, would hardly be perceptible, as the wave of excess of population, commencing between 20 and 30, would gradually extend into the higher ages, and would be succeeded by a similar wave of the descendants of the first immigrants, which would fill up the lower ages in a similar proportion. Almost the only noticeable consequence of immigration, as exhibited in this table, especially in Upper Canada, appears to be the small numbers in extreme old age, to which the wave of the great immigrations of 25 or 30 years ago has not yet reached. The great excess of the numbers between 20 and 40 in the State of New York, appears to be owing, not so much to the influx of permanent settlers, as to the temporary resort of persons in the prime of life to the great commercial centres. This tendency is more clearly visible if we take those counties alone, in which the great cities are situated, which exhibit an excess of 6 per cent. on the whole population between the ages of 20 and 40, over what is found in the country parts.

It is not easy to draw any safe inference from such a table of population, as both a high rate of births, and a high rate of mortality have a similar effect in rapidly reducing the proportionate numbers living at the several ages. Indeed, from the great preponderance in all countries of the deaths in the first few years, the two things almost necessarily go together, and an increased number of births involves an increased rate of general mortality. Such a scale, however, as that exhibited by Canada, is generally characteristic of a population growing rapidly by natural increase. If we look more into detail, many anomalies present themselves, which throw a suspicion upon the accuracy of the enumerators. Thus, it is hardly possible to conceive any law of mortality, which in five years would reduce the 17 $\frac{1}{2}$ per cent., said to be living under 5 years in Upper Canada, to the 12 $\frac{1}{2}$ per cent. living at the next period. In as far as it may be relied upon, this would point to a very large percentage of births with a fearful mortality in the earlier years. Other minor difficulties present themselves in the progress from year to year, but in its

general features I am inclined to think, that this constitution of population is a true and remarkable characteristic of Canada.

Irrespective of the proportions between births and deaths, with regard to which the Census affords us such doubtful data, there are some other sources from which we may obtain an approximation to the natural increase of the population—of Lower Canada especially. The population of French origin is absolutely unaffected by immigration, what change there has been being in the opposite direction, but if we compare the Census of 1852 and 1861, the numbers of French origin in Lower Canada have increased at the average annual rate of 2.651 per cent., irrespective of those who have left the country in the meantime, which is double the rate in Great Britain, and 40 per cent. more than in Norway, which shews the highest natural increase of any European country, and seems to keep up its character as an *officina gentium*. We may even push our researches to a much earlier period. A Census of Canada was taken with great care just before the conquest. It is frequently referred to in the official correspondence of the day as in progress, but I am not aware that the exact result has been preserved. We have, however, a despatch of Montcalm, of the date, April, 1759, in which he says, that the great Census is at last complete, that he has not as yet seen it, but that it shews a population of 82,000. A Census was again taken by the British authorities in 1765. It was contained in two large folio volumes, preserved in our own library, the first of which was lost in the fire, but the second, which was saved, fortunately contains a recapitulation, shewing the population of the rural districts, exclusive of Quebec and Montreal, to have been 54,275. There is also a note to the effect that including the towns, and making an allowance for the people absent in the woods, the whole population is estimated to be 80,000. This, taken in connection with Montcalm's despatch, appears to afford us a pretty secure basis. Since that time there has been no immigration, except of a few Acadians, whilst there has been a considerable loss to the United States. But if we take the population of French origin in both sections of the Province, we shall have a pretty fair representation, though

somewhat understated, of the descendants of the 80,000 Frenchmen who inhabited Canada in 1765. The French Canadians must, therefore, have increased during the 96 years, at least at the rate of 2.53 per annum.

We have also a system of registration in Lower Canada, much more perfect than anything in Upper Canada, although there is still great room for improvement. The Prothonotaries' returns for 1861 are much more complete than those for 1860, the year for which the births and deaths are given in the Census. Taking then the returns of 1861, and leaving out of account many of the counties from which no returns have been received, and others which are on the face of them imperfect, leaving out of account, also, Montreal and Quebec, I find forty-one counties with an aggregate population of 626,830, the returns from which appear to be tolerably perfect, and they shew 26,954 baptisms and 9,939 burials, which represent

Births - - - -	4.300	per cent.	on the population.
Deaths - - - -	1.586	"	" "
	<hr/>		
Natural Increase - -	2.714	"	" "

These numbers, I have no doubt are rather understated for the counties, in consequence of the imperfection of some of the returns, but the greater mortality of the cities will reduce the rate for the whole Province. To approximate to this we may estimate the remaining counties from the forty-one from which we have returns and then add the cities. Upon this principle I have included the towns of Three Rivers and Sherbrooke, amongst the counties, and I have taken the county of Quebec with the city, as they cannot be clearly distinguished in the returns. The result shews, for all Lower Canada,

Births,	4.034	per cent.
Deaths,	1.755	"
	<hr/>	
Natural Increase,	2.279	"

With a view of still further testing the subject, I analysed, with great care, the Prothonotaries' returns from 1851 to 1857, inclusive, since which latter date they have not been published. The

returns for 1853 are also missing. With the exception of Rimouski, Kamouraska, Ottawa and Pontiac, the returns of the Roman Catholic Clergy seem very perfect, but those of the Protestant denominations, except in the cities, are often wanting, and when they do appear, they are obviously imperfect. I therefore only took the Catholic baptisms and burials, and the Catholic population, leaving out those counties or parishes, from which no returns were given, and rectifying the population to the date of each return by the average annual rate of increase from 1852 to 1861. This calculation, which does not seem liable to any serious objection, gives the following result for the Roman Catholic population of Lower Canada :

COUNTIES FROM WHICH RETURNS WERE RECEIVED.

	Births.	Deaths.	Nat. Increase.
1851	4.688	1.728	2.960
1852	4.827	1.778	3.049
1854	4.411	2.007	2.404
1855	4.269	2.037	2.232
1856	4.496	1.758	2.738
1857	4.256	1.698	2.558
Average.....	4.491	1.836	2.655

QUEBEC AND MONTREAL, INCLUDING COUNTIES.

	Births.	Deaths.	Nat. Increase.
1851	5.023	3.566	1.457
1852	5.168	3.219	1.951
1854	5.435	5.442
1855	5.080	3.234	1.846
1856	4.920	3.054	1.866
1857	5.066	3.086	1.980
Average..	5.115	3.600	1.515

ALL LOWER CANADA—assuming the Counties and Parishes from which there are no returns to have the same average rates as other Counties.

	Births.	Deaths.	Nat. Increase.
1851	4.736	2.004	2.732
1852	4.877	1.988	2.889
1854	4.560	2.507	2.053
1855	4.395	2.223	2.172
1856	4.562	1.959	2.603
1857	4.382	1.713	2.469
Average.....	4.585	2.099	2.486

It will be observed that the rate of natural increase, as deduced from 1861, is quite within the limits of the variations in this

respect in different years. But making every allowance for the imperfection of the returns of 1861 the smaller rate for both births and deaths in that year is very remarkable. As I before observed, the deaths naturally rise and fall with the births, from the great mortality in infancy, but this nearly constant decrease of births since 1851, seems to point to a large emigration of persons in the prime of life. Nevertheless the rate of increase is very high as compared with other nations, and it is confirmed by the growth of the French population from 1852 to 1861, and during the much longer period since the conquest.

Rate of increase of French from 1765 to 1861	2.53	per ann.
Rate of increase of French from 1852 to 1861	2.651	per ann.
Rate of increase of Catholics in Counties (mostly French) from 1851 to 1857.....	2.655	per ann.
Rate of increase of Catholics in all Lower Canada from 1851 to 1857	2.486	per ann.

The near correspondence of the numbers arrived at by such very different methods, inspires great confidence in their general accuracy, and appears to place Lower Canada amongst the most rapidly increasing nations in the world.

In Upper Canada it is not possible to form any similar conclusion. The clergy are required there also to make returns to the Clerks of the Peace, but very few of them reach the Government. The only county, from which I can find anything approaching to systematic returns, is Haldimand, and they are not perfect enough to serve as the basis for any conclusion, even if a single county were sufficient to yield a trustworthy average. But if we cannot arrive at any such satisfactory result, as in Lower Canada, we may make some comparisons as between the two sections, as far as regards the number of births, which forms one important element of their relative rates of increase. The births, as corrected from the number living under one, according to the Census, do not differ very materially from those shewn in the Prothonotaries returns. In the 41 counties of Lower Canada, in which we can institute a comparison, the number living under one, called births in the Census, is 23,353, and if we add to it a proportion of the deaths, as before explained, the number becomes 24,653; but as the Prothonotaries' returns relate to a year later than that for

which the Census was taken, the whole population, and consequently the births, would have to be increased at the average rate of about 2½ per cent. The numbers, as corrected to the same period, would therefore be 25,279 against 26,954. The main difference is in the deaths, the Prothonotaries' returns giving 9,989 and the Census only 6,498. We may, therefore, for the purpose of comparison between the two sections, take as approximately correct, the births as above deduced from the Census, viz. : Upper Canada, 4,031 ; Lower Canada, 3,892. This greater proportion of births to the whole population is what one would *a priori* expect from the greater number of the people in Upper Canada at the reproductive ages ; but if we take the percentage on the number of married women under forty, which appears to be the truest criterion of the prolificacy of the two sections, the proportions are reversed. With a view of testing the generally received opinion of the greater prolificacy of the French race, I classified the counties in Lower Canada according to their French element, omitting the cities altogether, and I found that in those counties, containing 80 per cent. and upwards of French, the percentage of births to married women was 45.629, whilst in the rest of Lower Canada it was only 40.352, and for all the counties in Upper Canada, also omitting the cities, it was 42.772. The difference is so great and so uniform, even if smaller divisions are taken, that I am inclined to believe that it is truly characteristic, if not of the races, at least of the habits of society amongst them. How far the greater fecundity of the French may be modified by a different rate of mortality, we have no means of judging at present.

If we endeavour to discover the effect of immigration upon Lower Canada, it is observable that the general increase during the nine years since the former Census was taken has been at the average rate of 2.498 per annum, which is almost exactly the same as 2.486, the percentage of natural increase on the average of the several years from 1851 to 1857. The inference seems to be, that there has been no sensible difference between the numbers who have left Canada and the new importations. If we consider separately the population as classed under its origins, taking the figures as we find them, it

would not appear that there has been any considerable emigration of the French population, for its rate of increase has been almost as great as the natural increase of the counties, and there is rather a larger proportion of French than in 1852, about 76 per cent. against 75 per cent. It is difficult to reconcile this conclusion with the general belief in a large emigration of French. Our loss in this respect may have been over-rated, or the difference may be owing to the imperfection of the Census of 1852; or if it can be attributed to neither of these sources, it would follow that the natural increase must have been even higher than I have estimated it. The numbers of foreign birth are almost the same at both periods, 96,668 in 1861, against 95,153 in 1852, showing that the importations have more than counterbalanced the deaths during the interval. The principal change is in the natives of other origin than the French, whose average annual increase, 2.019, has been much less than the annual natural increase, indicating some considerable emigration of this class, or a much lower natural increase than of the French population.

In Upper Canada, from our ignorance of the rate of mortality, it is not very easy to estimate the effect of immigration, but some important indications may be obtained from a comparison with former Censuses. The first enumeration of the people in Upper Canada with which I am acquainted, was in 1811, when the numbers are stated as 77,000. Up to 1824, when the population was 151,097, the annual increase was at the rate of 5.32 per cent. From that date until the Union we had a tolerably correct enumeration almost annually, and we may exhibit the successive additions at nearly equal intervals.

Date.	Population.	Rate of Annual Increase
1824	151,097	
1832	261,060	8.77
1842	486,055	6.41
1852	952,004	5.62
1861	1,396,091	4.35

The last rate, which is the average for nine years, is less than the lowest recorded for any previous year, with the single exception of 1826, when it was 3.59. The greatest increase recorded is that

from 1832 to 1834, the average for the two years being 10.73. This constant decrease of accessions from without, point to a rapidly approaching period, when we must mainly depend for increase of strength upon the natural growth of the people already settled in the country. A large proportion of the increase is, however, still be attributed to immigration, and it is an interesting enquiry what that proportion may be, and how much is due to natural growth. The data are very imperfect, but we may arrive at a very rough approximation, or at least ascertain the limits within which the additions from immigration and from natural increase must have been.

If we assume the natural increase of Upper Canada to be at the annual rate of $2\frac{1}{2}$ per cent., which is nearly the rate arrived at for the whole of Lower Canada, from the Prothonotaries' returns, there would remain an addition of 207,170 to the population unaccounted for, and which, on this supposition, must have arisen from immigration. The returns of the Emigration Office shew, that from 1852 to 1860, both years inclusive, 225,865 steerage passengers arrived at the ports of Quebec and Montreal, and 123,631 appear to have come through the United States, during the same period. Of these, 181,741 are returned by the local agents as being settled in Upper Canada. Allowing for the natural increase of these at the same rate, for the mean period of $4\frac{1}{2}$ years, the number would be raised to about 200,000. This appears to be the extreme possible limit to which immigration can have swelled the population, and it would require a natural increase of rather more than we have taken for Lower Canada, to account for the remainder.

But the numbers who are supposed to have permanently settled in the country, are probably stated too high, and there has notoriously been an emigration of persons living in Upper Canada before 1852, which must have most materially reduced the balance. The numbers of foreign birth living in Upper Canada in 1852, were 399,494, which, in 1861, had become 493,212, making an increase of 93,718. All of these must have been immigrants, and there must have been as many more as would replace those of the

399,494 who had died. As a great number of them would be in the prime of life, we can hardly estimate the rate of mortality as high as 1 per cent, but, even on this estimate, the numbers of new emigrants would only be about 128,000, or with their natural increase as above, about 140,000, so that the increase based on the Emigrant Agents returns, would appear to be overestimated. But, on the other hand, the United States Census shows that the natives of British America had increased from 147,700 in 1850 to 249,970 in 1860: The several provinces are not distinguished in the United States returns, but in the State of New York, in 1855 the Canadians were rather more than nine-tenths of those from all British America. Even allowing that in Maine and other Eastern States, a larger proportion may have been from New Brunswick and Nova Scotia, and that there were certainly many Lower Canadians amongst them, it is hardly too much to assume that of the 102,000 added to the population of the United States, one-half were from Upper Canada. This would leave a very small balance in favor of Upper Canada, certainly not as much as 100,000. If we estimate the whole accession due to immigration at that amount, it would require an average rate of natural increase to account for the whole number, of at least $3\frac{1}{2}$, which appears much higher than is probable. The truth probably lies between the two limits as thus arrived at, but it seems certain that the natural growth of the population in Upper Canada must be more rapid than that of Lower Canada.

I have been induced to enter into these details partly with a view of shewing what conclusions we may draw, with some degree of confidence, from the statistical data to which we have access, and partly to point out the extreme insufficiency of these data, and the doubts which must rest upon many points of the utmost importance in relation to the future prospects of our country. My labour will not have been in vain, if any one should be induced by the observations I have made to press upon the Legislature the necessity for organizing some system upon which more trustworthy statistics may be obtained. The main things which appear to be wanted are—a more perfect organization for collecting and tabulating

the facts, and a greater frequency in the returns by a compulsory local registration. The decennial census would still be necessary, as there are many important facts, which it would be too cumbersome and expensive to attempt to collect at shorter intervals; but there are also many details which could easily be recorded annually, and which could then be obtained with much greater accuracy. Not the least advantage to be derived from a more frequent registration would be, the preparation which it would supply for conducting properly the more perfect decennial Census. The collection, tabulating and discussion of the multifarious details of a great Census, simple as each individual process appears to be, require some special training in those who are engaged upon it, and a well devised system of checks under a responsible head, to prevent the recurrence of such gross errors as are to be found in the two last Censuses. It is hardly possible to expect any much better result to follow from the returns of enumerators, who have had no experience in the work expected from them, and from submitting their schedules to a body of extra clerks, called in for the occasion, who appear to have worked without concert, and almost without supervision.

The system which I would recommend, as most likely to produce a valuable body of statistics, would be the following:—It might still be desirable to require the clergy of the several denominations to make returns of their marriages, baptisms and burials, as at present; but the baptisms and burials after all only approximately represent the births and deaths, and experience has shewn that it is almost impossible to obtain, in this way, punctual and correct returns; and in Upper Canada especially, as in other countries where there are a great variety of religious denominations, it would be hopeless to expect any accuracy from such a source. These returns might act as a check upon the facts as otherwise obtained, but there can be no system of registration approaching to completeness other than a compulsory civil registration, as in England and most European countries, and in some of the states of the neighboring Union. Every person should be bound under a penalty to register with some local officer, within a given time,

every death or birth occurring in his family, and in order to remunerate the officer, and to give him an interest in the completeness of the registry, a small fee should be payable to him on each entry. I would take advantage as far as possible of our present municipal organization, and, in Upper Canada at least, the local officer might be the township clerk. As the township clerk is often changed, and as there is generally no proper office in which the registers could be safely kept, I would require the township clerk to file the originals with the registrar of the county, at the end of every quarter. These registers, besides their use for statistical purposes, would serve as an authentic record of births and deaths, which, together with the registration of marriages, which is already made in the registrar's books, would be always open for reference in questions of succession to property. Both objects should be kept in view, and the form of the registers might perhaps be something like the following:—The township clerks might be supplied by the registrar with sheets ruled in columns shewing, for births—date of birth, sex, name, father or mother's name, signature of person making the registry, date of registry; and for deaths—date of death, name, age, disease, signature of person making the registry, date of registry. Each sheet, when returned to the registrar, should bear the certificate of the clerk. In Lower Canada, where the municipal organization is not so perfect, it might be desirable to have some other local registrar than the township clerk, and the sheets might be deposited as at present with the Prothonotary; but the forms, and as far as possible the system, should be uniform in the two sections, and the registration should be that of births and deaths, and not merely the ecclesiastical record of baptisms and burials.

It should also be incumbent upon the assessor to have a column in his roll for the numbers in each family. This used always to be done in Upper Canada before the union, and gave very little trouble, and the numbers under fifteen are still given for school purposes. It might be desirable to distinguish males from females, and to have some general classification as to ages, as under 5, 5-15, 15-40, above 40, but it would not be wise to enter into too much

detail. This portion of his roll should be made out separately, and should be handed over by the clerk to the county registrar. .

I would throw upon the registrar the duty of compiling from these materials the returns to be made annually to government, on forms to be furnished to him, which should not enter into too much detail, and I would pay him out of provincial funds for the work. The remuneration need not be very high, and the total cost would be quite an insignificant item ; but I hold it as a most essential part of any such scheme, that everybody should be paid for the work imposed upon them. It is the only way in which correct and punctual returns can be expected. However conscientiously even the best men may perform any act required of them as a duty, they will do it more readily and more certainly, if besides discharging the duty, they make \$20 or \$30 by the transaction.

With such an organization, we should have a certain set of men all through the country, the assessors, the township clerks, and the registrars, who had already some experience in the kind of work, and they would form a useful material, out of whom to select the enumerators and commissioners, when the more formal Census came to be taken. There would remain the organization of the department of government, on which would fall the duty of classifying and tabulating the returns received from the whole country. The returns of vital statistics would form only one portion of this work. The statistics of trade and navigation, of railways, of banks, savings banks, building societies, insurance companies, hospitals and charities, and schools, criminal and other judicial statistics, militia and municipal statistics, should all be ultimately combined into one annual volume. The preparation of these, and still more, the devising of the best forms in which the information should be collected, and presented to the public, would require much miscellaneous knowledge and experience, which could hardly be expected to be found in any one department. There should be a board of statistics, presided over by one of the Executive, and and of which some others of the ministry, the minister of finance especially, might be members. But the real work would fall upon the deputy heads of those branches, which are especially concerned

with the subjects embraced in the general plan, and who should also be members of the board. The business of the board, as such, would be almost exclusively deliberative—to decide upon what information should be collected, and to devise the best forms in which it should be submitted, so that the statistics of one branch might harmonize with, and throw light upon, those of another. I may give an example of what I mean: The trade and navigation returns shew the amount of timber and lumber exported, and the report of the Commissioner of Crown Lands gives the statistics of the several timber agencies; but from want of concert between the two departments, the forms in which the returns are exhibited make it impossible to connect the two sources of information upon this most vital portion of our industry, so as to trace the article from the various sources from which it was produced, to the quarters in which it found a market. The board would only lay down a general plan; the individual members would each be responsible, as part of the business of his own department, and with his own staff, to collect the information required. The only other thing required, besides the occasional assistance of copyists, would be a thoroughly competent secretary, with perhaps, one clerk, who would collect some of the returns, and superintend and publish the whole.