

H. D. Scally

Concepts P. H. Bryce

THE RELATION OF RURAL AND URBAN POPU-
LATIONS AS SHOWN BY THE CENSUS IN
THE UNITED STATES AND CANADA
TO PUBLIC HEALTH PROBLEMS

BY

DR. PETER H. BRYCE

*Chief Medical Officer to the Bureau of Immigration, Department
of the Interior, Ottawa, Canada*

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THE RELATION OF RURAL AND URBAN POPULATIONS AS SHOWN
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Dr. PETER H. BRYCE, Chief Medical Officer to the Bureau of Immigration, Department of the Interior, Ottawa, Canada.

I desire to direct your attention to the two tables in the following diagram showing the total populations and their increases in the United States and in Canada during the last census periods, and the rate of urban and rural increases in each, and their relation to each other and to similar tables in previous census periods.

TABLE I.

	Population of the United States.				Percentage distribution.			
	1910	1900	1890	1880	1910	1900	1890	1880
Total.....	91,972,206	75,994,575	62,947,714	50,155,783
Rural.....	49,348,883	45,187,390	40,227,491	35,383,345	53.7	59.5	63.9	70.5
Urban.....	42,623,383	30,797,185	22,720,223	14,772,438	46.3	40.5	36.1	29.5

Total increase of United States 1900-1910, 21 per cent.

Total rural population, 1900.....	45,197,390
Total rural population, 1910.....	49,348,813
Actual increase in census period.....	4,151,423
Estimated natural increase at 1.2 per cent per annum.....	5,423,686
Total urban population, 1900.....	30,797,185
Total urban population, 1910.....	42,623,383
Actual increase in census period.....	11,826,198
Estimated natural increase at 1.5 per cent per annum.....	4,619,528
Total United States immigration in 10 years, 1901-1911.....	8,789,386
Estimated immigrant farmers and farm laborers, based on data of 1911...	2,636,815
Estimated rural loss without allowing for any natural increase in rural immigrants.....	4,656,815
Immigration to the United States, by years:	
1901.....	487,918
1902.....	648,743
1903.....	857,846
1904.....	1,020,499
1905.....	1,020,499
1906.....	1,110,499
1907.....	1,285,249
1908.....	782,870
1909.....	751,786
1910.....	1,041,570

TABLE 2.

	Population of Canada.				Percentage distribution.		
	1911	1901	1901		1911	1901	1891
Total.....	7,204,838	5,371,315	4,833,239	Rural.....	54.4	62.3	67.9
Urban.....	3,280,444	2,021,799	1,537,089	Urban.....	45.6	37.7	32.1
Rural.....	3,924,394	3,349,516	3,296,141				

Total increase for all Canada, 1901-1911, 34 per cent.

Total rural population, 1901.....	3,349,516
Total rural population, 1911.....	3,924,394
Actual rural increase in census period.....	575,878
Actual percentage of rural increase.....	17.6
Estimated natural increase at 1.2 per cent per annum.....	401,941
Total urban population, 1901.....	2,021,799
Total urban population, 1911.....	3,280,444
Actual increase in census period.....	1,258,645
Actual percentage increase.....	62.5
Estimated natural increase at 1.5 per cent per annum.....	303,269
Total immigration to Canada, 1901-1911.....	1,715,326
Estimated farmers and rural laborers, based on 1911 (at 30 per cent).....	514,597
Estimated rural loss without allowing for natural increase of rural immigrants.....	340,660
Canadian immigration by years:	
1901-2.....	67,379
1902-3.....	128,364
1903-4.....	130,331
1904-5.....	146,266
1905-6.....	189,064
1906-7.....	124,667
1907-8.....	262,469
1908-9.....	146,908
1909-10.....	208,794
1910-11.....	311,084
Total.....	1,715,326

In a paper in section 7 I have dealt with the question of the distribution of immigrants after arrival, so need do no more here than point to the results in both countries.

What is abundantly apparent in Canada, even more than in the United States, is that, in spite of every organized effort on the part of governments to place immigrants on the land, the total outcome of rural immigration in Canada in a total immigration in 10 years by seaports alone of 1,114,802 plus an additional 524,852 in nine years from the United States has not equaled what the natural increase of the population of Canada in 1901 was at a rate per 1,000 of 1.2 per cent per annum. Thus:

Population of Canada in 1901.....	5,371,315
Increase by 12 per cent.....	644,557
Rural increase in Canada in 10 years.....	574,878

When it is realized, on the other hand, that while the total population increase in Canada in 10 years was from 5,271,315 to 7,204,838, or 34 per cent, the total urban increase was from 2,021,799 to 3,280,444, an increase of 1,258,645, or 62.25 per cent, the nature of the dislocation of population in Canada will be understood and the nature of the problem before us appreciated. Further, the number of immigrants who in 10 years entered Canada, giving their vocation as farmers and farm laborers, was 619,955. Canadian cities, with a total of 2,000,000 in 1901, have in practice had to absorb 125,000 per annum, finding employment for them, housing for them, education for them, and have had to undertake the task of Canadianizing and policing the foreigner and especially of caring for the health of many thousands to whom the social life of towns was unknown, or who had to be prevented from creating slums similar to those they had escaped from. Similar figures for the United States, as given in the tables, illustrate the immediate effects upon health.

Illustrating the relationship between slum populations and insanity, Dr. Mott, pathologist to the metropolitan asylums of London, in a paper recently presented before the Royal Sanitary Institute, gives a table of the pauper lunatics of London by parishes. They ran from as low as 2.6, 2.8, 3.5, in the best, to 8.1, 9.2, and 12.7 per 1,000 in the poorest and most crowded parishes. Dealing with prevention Dr. Mott said:

If it can be shown that there is a correlation between insanity, tuberculosis, alcoholism, syphilis, and overcrowding in one-roomed premises, and insanitary dwellings in our large cities, it might be asked whether public money would not be better expended in solving the housing problem than in spending vast sums on sanatoriums and lunatic asylums in the hope of dealing with physical and mental degeneracy.

Yet another set of figures depending directly upon the former is found in the prices of foods.

In England the increase in prices of the chief foods of the people, as seen in the following table, has been taken from the London Daily Chronicle, July 17, 1912, and serves to illustrate how her position enables her to minimize, in the matter of food prices, the evils springing from the industrialism of her cities:

Increase in food prices in—	Per cent.
United States.....	29
Canada.....	27
France.....	20
Germany.....	40
England.....	5

If foodstuffs alone are taken, the increase in England is but 2 per cent.

Many other facts might be given to illustrate a state of affairs which has existed and still exists in other countries, which have

developed rapidly along similar lines; and it is obvious that from the sociological and economic, as well as public-health standpoints, these figures are fraught with a meaning to which it is idle for us to shut our eyes. We have, in Canada, been so accustomed to viewing England as the country whose lead we should follow, that it may not seem unnatural that we should wish to emulate her in the growth of our cities, which increased by 1,258,645 in 10 years. It will not be forgotten, however, that England's position as the workshop of the world, and the transporter across seas of the great bulk of the world's ocean-going commerce, has given her an unique position in the world, and with her lands so largely already occupied it was not unnatural that the growing industries should lead to a dislocation of her population so that in 1911 there was an urban population 62.5 per cent greater than in 1901.

Similarly, in the United States, it was not unnatural that the small State of Massachusetts, poor from the agricultural standpoint, should with a growing West have become the Manchester of the New World; neither is it wholly unnatural that the cities of the older Provinces, Quebec and Ontario, should have rapidly grown to become the industrial centers for the growing West.

The pity of it all is that from the physical and economic standpoints there should and indeed must follow those evils which have grown out of industrialism everywhere, and which, as in England to-day, are taxing the thought, energies, and financial resources of the people to an extent which we in a new country are as yet unable to appreciate. That England is endeavoring successfully to cope with her problems in a manner unequaled ever before, and after a manner worthy of her highest traditions, does not make it any the less incumbent upon us that we endeavor to realize what lies before us and to take such steps as may yet be possible to minimize the evils which are growing apace.

Before dealing with some of the preventive aspects of our problem, it will be proper to refer to some of the conditions which have grown up with industrialism, and I shall refer briefly to what are illustrated by the most exact statistics of England. Sir James Crichton Brown, F. R. S., in June last declared open a new mental hospital in Cheshire. In his speech he referred to modern social conditions in reference to insanity. He said:

It is, I think, with mixed feelings that we take part in the ceremony such as that which has brought us together to-day. We must deplore the fact that such institutions are necessary. In sanguine moments we, those of us of sanguine temperament, may perhaps look forward to the time when there will be no further call for lunatic asylums in this country. As regards another group of diseases, those included under tuberculosis, the cure is in sight.

But as regards mental and nervous diseases which depend not on any specific microbe with which it can grapple, but in a multiplicity of insidious causes, our mastery over them is remote, if indeed it ever comes before the millenium. The risk is

these mental and nervous diseases may make fresh encroachments and strengthen their hold on us.

The broad fact remains that the number of registered lunatics has increased enormously and is still increasing.

From 1859 to 1910, or 50 years, the notified insane had increased in England from 32,762 to 153,157, or by 262 per cent, while the population has increased by only 85 per cent, while, as Dr. Burn says, there has been no increase in the rate of recovery, vast sums have been spent on asylums, medical and surgical science have advanced by leaps and bounds, housing and sanitation have improved, education has extended, the use of alcohol has diminished, and yet the number of lunatics goes on increasing.

The explanation of this is, from any point of view, to be found in the strain and stress of the age in which we live. It will not be disputed that during the last century the possible causes of nervous disturbance have increased prodigiously. The tendency of civilization has been to transfer the burden of breadwinning for the masses of the people from the muscles to the nerves. In the area of competitive business the victory is now to the vivid and to the nervous, not to the stolid and to the brawny. The introduction of machinery into every branch of industry has made life at once more monotonous and irritating and in some industries a policy of "speeding up" has been adopted, which increases closer work and fewer intervals of rest, and is therefore peculiarly exacting and exhausting.

The diffusion of education has widened the periphery from which stimuli of every kind may reach the brain. In response to our ever-shifting kaleidoscopic surroundings, we have become more fitful, mercurial, wayward, and impulsive than we used to be, and suffer more from what may be called "brain fidgets." It is certain that we are more jumpy than we used to be, have to be more on the alert, and so make sharper demands on our nerves, and are prone to those nervous breakdowns that lead up to mental disorder. We have been crowding our people into towns where hustling and nervous agitation are inevitable, we have been bringing up our babies on anything but mother's milk, and by the employment of women in many industries have curtailed that family life in which the young nervous child best gains and thrives. We have been cultivating emotionalism and eagerly pursuing all kinds of pleasurable excitement, while we have narrowed our horizon and lost sight of some of those ideals that helped in the past to maintain a nervous and mental equilibrium. Notwithstanding all our improved economic conditions, we have not yet, as regards the nervous system, succeeded in reconciling modern civilization with biological processes. It is of course only by further economic, social, sanitary, and ethical reforms that the great nervousness of our age is to be abated.

To supply yet more exact facts, I may refer to a lecture on "Sanity and insanity," before the Royal Sanitary Institute, in April last, by Dr. F. W. Mott, pathologist to the London County Asylum, as confirming Dr. Brown's remarks. Dr. Mott says: "A neuropathic heredity is the most important cause of insanity."

Dealing with the statistics of London insane, Dr. Mott points out what, in my own official work has necessarily been made apparent, especially in British immigrants, that—

There are two very numerous classes of individuals whose conduct is antisocial and who at present are not registered or controlled. They are, first, the chronic, incurable, inebriate, dangerous to himself and society and responsible for a large proportion of the crimes of violence, consequently a perpetual danger to the community.

Secondly, the higher grade imbecile, of feeble will power, slender sagacity and energy, and lack of moral sense. Although the feeble-minded may be met with in

all kinds of society, they are especially to be found amongst the submerged *d*izens of the one-roomed tenements of our large cities.

The sooner the truth of the adage, that a silk purse can not be made from a sow's ear, is recognized the better, seeing that every child in a school for defectives costs the State three times as much as a healthy child. The Royal Commission disclosed the fact that 4.6 per 1,000 of the total feeble-minded population of England and Wales were not registered and are even more numerous than the registered insane. Indeed, so serious a menace to society has the situation become that in the present Parliament of England a bill is being discussed for compulsory dealing with this class.

He further makes the remarkable statement that in districts where we should, owing to improvements and the pulling down of slum property, expect a diminution of pauperism and insanity, there is no decrease, and in many instances an increase.

I have thus expressed my opinion, by extended quotations from two, than whom we know of no greater authorities, and both point to the same phenomena as having the same melancholy results both on the individual and on society. The world has before had periods of what we may call climax. Alexanders, Cæsars, and Napoleons have kept a whole world in awe; but probably never was there the same intensity of action and reaction as in the Napoleonic era, and nowhere can I recall language so acute, so dramatic, so full of anguish as that of Alfred de Musset in *The Confessions of a Child of the Century*.

Here is his picture:

"During the wars of the Empire, while husbands and brothers were in Germany, and anxious mothers gave birth to an ardent and neurotic generation, conceived between battles, reared amid the noises of war, thousands of children looked about them with dull eyes while testing their limp muscles. From time to time their blood-stained fathers would appear to raise them to their gold-laced bosoms, then place them on the ground and remount their horses.

Never had there been so many sleepless nights as in the time of that man; never had there been seen hanging over the ramparts of the cities such a nation of desolate mothers; never was there such a silence of those who spoke about death."

But further illustrations of the point are unnecessary. The daily life of our cities, as set forth in the yellow journals, completes the picture I have by quotations attempted to describe. In a paper on the better distribution of immigrants I have pointed out that governments, capitalists, and individuals must, by whatever methods, set the tide of population flowing to the land, and where not possible, to minimize by every known means, whether educational, social, or sanitary, the effects of an urban life, whose essential qualities have been fully described and whose effects are obvious to all.