# TRANSACTIONS

OF THE

# Nova Scotian Institute of Science.

## SESSION OF 1898-99.

### I.—Statistics of Expenditure and Consumption in Canada. —By Professor John Davidson, M. A., Phil. D., *Fredericton, N. B.*

*(Read Nov. 14th, 1898.)*

The ultimate test of a nation's prosperity is the quantity and quality of the goods it contains. Other tests are relative and indicate business activity rather than national welfare. All wealth is produced to be consumed, and the whole process of production is carried on for the benefit of the consumer. For him there is seedtime and harvest; for him the factories and the stores are run; for him railroad and steamship lines operate, and banks conduct their business. It is conceivable that the volume of business may be large within a nation which yet is poor and relatively unprosperous. Increased activity does not always mean increased welfare; and that community alone is rich and prosperous at whose command this activity places a large stock of consumable goods; and the most satisfactory evidence of this command is provided by the statistics of the consumption of the community. That is direct evidence; all other evidence is indirect and presumptive.

Unfortunately, direct evidence is not always available. We depend for information almost entirely upon government bureaus and departments; and these are concerned chiefly with their own

affairs. They collect figures of exports and imports because of the obvious bearing of such figures upon the collection of a revenue; and in some cases provide us with information regarding the industry carried on within the country because certain articles of manufacture are subject to internal revenue duties. Where there is no question of collecting revenue, the information afforded us is not usually carefully collected. We know more accurately what is imported than what is exported; we know better how much beer is consumed than we do how much meat or grain is consumed; how much tobacco better than how much clothing. The interest of the government is mainly in the collection of revenue. An enlightened government may make provision for the collection of other statistics; it may establish labor bureaus and agricultural departments; it may publish banking returns and railroad earnings; but since the interest of these things is not so immediately practical, the information afforded is apt to be meagre and to cease, short of the point of completeness. For instance, the main industry in Canada is agriculture; but we know less of the output of our farms than we do of the output of our breweries. Ontario and Manitoba collect elaborate agricultural statistics; but in the other provinces the gathering of information is perfunctorily performed or not performed at all; and, consequently, we cannot even use what information we have, because statistics of interprovincial trade are lacking. In the census years, elaborate returns are made; but even here there are gaps in our information, and too much of what is set down depends on the memory of the private citizen, which is not a scientific instrument. In Canada there is an additional difficulty in the way of obtaining adequate consumption statistics. Nearly half of our population is dependent on agriculture. In time, and with organization, we may learn the amount of eggs and potatoes, milk and meat and vegetables, maple sugar and cordwood marketed; but it will always be next to impossible to ascertain how much of these commodities the autonomous producer uses in his own consumption. Private investigation may step in to make up for the deficiencies of

governmental machinery; but until the community is so far educated that there is a statistical or economic association in every parish, we can hardly hope for the fullest information. Consumption is in its nature a private concern, and man will require to be much more methodical than he is at present before we can present anything like a picture of the consumption of a people. At the present time we are compelled to use what information we have as an indication of the complete result; and generalizing from the experience of individuals, treat the consumption of certain articles, for which the government provides statistics which may be relied upon, as representing the whole.

It is necessary first to shew in what proportions the people of Canada expend their incomes, because otherwise we should not be able to estimate the importance of the results obtainable for the consumption of specific articles. If the total expenditure of a people on food amounts to no more than fifty per cent. of its income, an increase in the consumption of coffee will mean a less increase of prosperity then it does for a people which spends seventy per cent. of its income on food. In the latter case it means that the people are rising from the lowest class, where the necessaries of life absorb the greatest part of the income, to a condition where other considerations are becoming important; in the former case it may mean a change in the form of consumption only. This aspect of the question has some immediate practical importance. In the discussion of the financial aspects of prohibition, little attention has been paid to the fact that not all the expenditure of the Canadian citizen is on taxable goods. Prohibitionists claim that the fifty million dollars annually spent upon intoxicants will necessarily be spent on other articles, and that the government need not confuse the issue by dark suggestions of direct taxation; for consumption will not be reduced, but simply changed. But, though the same amount will still be spent, it does not follow that it will be spent in such a way as will provide a reveuue. In so far as it is spent on food, there would be an increased consumption of food-stuffs on which, while the consumer may be paying a tax in the shape of enhanced prices,

due to protection, the government may realize little or no revenue; while in so far as it is spent on education or on better house accommodation, the government would gain nothing whatever to make up for the revenue from the taxes on beer and spirits. No doubt, there would be increased expenditure on clothing; but the percentage of income spent in Canada is but 17; and the tax is already as heavy as it can be to be productive of revenue. Probably seventy-five per cent. of the changed consumption would yield no revenue whatever.

The investigation of expenditures has been carried so far that certain empirical laws have been established. It may seem to some that the forms of expenditure are so much a matter of individual taste and caprice that no general conclusion can be established; but, after all, the differences among men are not very great. The fundamental necessities of life are the same for all, and caprice does not enter in till the dominant wants have been satisfied; and by taking a large number of instances, the effects of individual caprice may be eliminated and an average set down. The first fairly complete investigation in this sphere was made by Engel, and subsequent investigation has served to establish his conclusions more firmly.

These are:—That the greater the income, the smaller the relative percentage of outlay for subsistence;

That the percentage of outlay for clothing is approximately the same, whatever the income;

That the percentage of the outlay for rent and for fuel and light is invariably the same, whatever the income;

That as the income increases in amount, the percentage of outlay for sundries becomes greater.

We are fortunately able to present results for Canada, which may be compared with the statistical data brought forward by Engel and other investigators. The Ontario Bureau of Statistics during several years presented statistics on the expenditure of the working classes in certain cities of Ontario; and in countries

like Canada, where there are few extremes of wealth and poverty,* the results thus established may be accepted as tolerably accurate for the whole Dominion. Local variations there must, of course, always be. Rent is higher and fuel dearer in the towns than in the country; while in the country food probably, and clothing certainly, on the whole, are dearer than in the cities. The figures cover a period of four years, and their accuracy has been tested by the statistician and verified by comparisons. The statistics of five of the more important towns in Ontario have been selected by the writer for further analysis and calculation, and the results are set forth in the tables on the next page.

When these tables, which are extracted from the Bureau Reports, are reduced to percentages and expressed in terms of the number of day's labor necessary to command the various goods enumerated, we get the results in a form which permits comparison with other countries. The results in this form are contained in the tables on p. 7.

*Compare the sections of this paper dealing with house accommodation later for on enquiry into the existence of extremes of wealth in Canada.

| | Earnings. | Day's labour in year. | Rent. | Fuel. | Clothing, per head. | Food, per head. |
|---|---|---|---|---|---|---|
| **City of Hamilton.** | | | | | | |
| 1886 | $449 | 216 | $76 | $41 | $16.45 | $53.65 |
| 1887 | 415 | 234 | 81 | 41 | 12.89 | 45.76 |
| 1888 | 417 | 230 | 81 | 38 | 13.43 | 47.74 |
| 1889 | 418 | 244 | 90 | 37 | 13.89 | 38.65 |
| Average. | 424.7 | 231 | ..... | ..... | ..... | ..... |
| **City of Kingston.** | | | | | | |
| 1886 | $469 | 293 | $70 | $36 | $18.12 | $43.90 |
| 1887 | 453 | 266 | 70 | 42 | 12.91 | ..... |
| 1888 | 482 | 280 | 70 | 41 | 18 92 | 43.19 |
| 1889 | 379 | 244 | 68 | 31 | 22.28 | 49.63 |
| Average. | 446 | 271 | ..... | ..... | ..... | ..... |
| **City of London.** | | | | | | |
| 1886 | $425 | 270 | $73 | $40 | $17.66 | $45.63 |
| 1887 | 421 | 265 | 70 | 40 | 15.58 | 50.39 |
| 1888 | 436 | 268 | 77 | 40 | 18.59 | 47.31 |
| 1889 | 431 | 244 | 66 | 37 | 15.91 | 46.54 |
| Average. | 428 | 261 | ..... | ..... | ..... | ..... |
| **City of Ottawa.** | | | | | | |
| 1886 | $523 | 305 | $ 81 | $34 | $21.96 | $35.46 |
| 1887 | 385 | 223 | 97 | 32 | 10.52 | 36.55 |
| 1888 | 505 | 228 | 71 | 37 | 13.14 | 45.70 |
| 1889 | 440 | 255 | 110 | 33 | 11.94 | 35.15 |
| Average. | 463 | 253 | ..... | ..... | ..... | ..... |
| **City of Toronto.** | | | | | | |
| 1886 | 487 | 272 | $ 92 | $40 | $23.96 | $54.32 |
| 1887 | 480 | 246 | 112 | 41 | 16.93 | 47.92 |
| 1888 | 526 | 270 | 121 | 45 | 15.87 | 45.62 |
| 1889 | 474 | 262 | 110 | 39 | 16.67 | 56.89 |
| Average. | 492 | 263 | ..... | ..... | ..... | ..... |

| | Days of Labor Necessary to Procure | | | | Percentages of Income Expended on | | | |
|---|---|---|---|---|---|---|---|---|
| | Rent. | Fuel. | Clothing per Family. | Food. | Rent. | Fuel. | Clothing per Family. | Food. |
| **Hamilton.** | | | | | | | | |
| 1886 | 36 | 19 | 38 | 123 | 17 | 9 | 18 | 57 |
| 1887 | 45 | 23 | 35 | 124 | 19 | 9 | 15 | 50 |
| 1888 | 45 | 21 | 34 | 123 | 19 | 9 | 15 | 55 |
| 1889 | 52 | 22 | 37 | 103 | 21 | 9 | 15 | 42 |
| Aver. | 44.5 | 21.2 | 36 | 118.2 | 19 | 9 | 15.7 | 51 |
| **Kingston.** | | | | | | | | |
| 1886 | 44 | 22 | 52 | 124 | 15 | 7 | 18 | 43 |
| 1887 | 41 | 25 | 35 | ..... | 15 | 9 | 15 | ..... |
| 1888 | 40 | 23 | 46 | 105 | 14 | 8 | 16 | 38 |
| 1889 | 45 | 20 | 58 | 127 | 18 | 8 | 24 | 52 |
| Aver. | 42.5 | 22.5 | 47.7 | 118.6 | 15.5 | 8 | 18.2 | 44.3 |
| **Ottawa.** | | | | | | | | |
| 1886 | 47 | 19 | 64 | 123 | 15 | 6 | 20 | 40 |
| 1887 | 53 | 18 | 32 | 106 | 23 | 8 | 14 | 49 |
| 1888 | 32 | 16 | 34 | 124 | 14 | 8 | 15 | 53 |
| 1889 | 64 | 19 | 39 | 109 | 25 | 8 | 14 | 49 |
| Aver. | 49 | 18 | 42.2 | 115.5 | 19.2 | 7.5 | 15.7 | 47.7 |
| **London.** | | | | | | | | |
| 1886 | 46 | 25 | 54 | 141 | 17 | 9 | 20 | 43 |
| 1887 | 41 | 25 | 43 | 141 | 16 | 9 | 16 | 50 |
| 1888 | 47 | 24 | 58 | 107 | 17 | 9 | 19 | 40 |
| 1889 | 37 | 20 | 44 | 130 | 15 | 8 | 18 | 53 |
| Aver. | 42.7 | 22.5 | 49.7 | 129.7 | 16.2 | 8.7 | 18.2 | 46.5 |
| **Toronto.** | | | | | | | | |
| 1886 | 51 | 22 | 53 | 143 | 19 | 8 | 20 | 50 |
| 1887 | 51 | 21 | 36 | 107 | 23 | 8 | 17 | 43 |
| 1888 | 62 | 16 | 34 | 124 | 23 | 8 | 14 | 57 |
| 1889 | 61 | 21 | 37 | 93 | 23 | 8 | 14 | 49 |
| Aver. | 58 | 20 | 40 | 117 | 22 | 8 | 16.2 | 49.7 |

For purposes of comparison, however, the corresponding figures and percentages for the whole number of towns taken together, and for the whole province, are more useful; and suit our purpose of international comparison better:—

PROVINCE OF ONTARIO.

| | Earnings. | Days of Labor. | Rent. | Fuel. | Clothing per Head. | Food per Head. |
|---|---|---|---|---|---|---|
| 1886 | $451 | 270 | $76 | $40 | $20.83 | $42.30 |
| 1887 | 449 | 257 | 82 | 39 | 15.85 | 44.37 |
| 1888 | 479 | 269 | 77 | 37 | 17.41 | 42.76 |
| 1889 | 467 | 272 | 81 | 41 | 17.10 | 44.14 |
| Aver. | 462 | 267 | ..... | ..... | ..... | ..... |

| | DAYS LABOR NECESSARY TO PROCURE | | | | PERCENTAGES OF INCOME EXPENDED ON | | | |
|---|---|---|---|---|---|---|---|---|
| | Rent. | Fuel. | Clothing per Family. | Food per Family. | Rent. | Fuel. | Clothing per Family. | Food per Family. |
| 1886 | 45 | 24 | 57 | 91 | 17 | 8 | 21 | 33 |
| 1887 | 45 | 22 | 41 | 91 | 18 | 8 | 16 | 35 |
| 1888 | 41 | 20 | 46 | 115 | 16 | 7.7 | 18 | 43 |
| 1889 | 47 | 23 | 46 | 122 | 17 | 8.8 | 17 | 44 |
| Aver. | 44.5 | 22.2 | 47.5 | 105 | 17 | 8.1 | 18 | 39 |

The average of the averages of the five cities above may be placed beside the provincial average (taken from returns made by artisans in the smaller towns and villages):—

| | Earnings. | Days Labor in year. | PERCENTAGES EXPENDED ON | | | |
|---|---|---|---|---|---|---|
| | | | Rent | Fuel. | Clothing per Family. | Food per Family. |
| City average, 1886-89 | $451 | 256 | 18.4 | 8.3 | 17 | 47.8 |
| Prov. average, 1886-89 | 462 | 267 | 17 | 8.1 | 18 | 39. |

The results thus obtained are in substantial agreement with the results established under greatly varying conditions in

Europe and America, as the following tabular comparison shews. The table is taken in part from Schönberg's Handbuch and in part from U. S. Labor Reports:—

| Percentages on | Great Britain. | Prussia. | Ontario. | Massachusetts. | Illinois. |
|---|---|---|---|---|---|
| Food..... | 51.36 | 50.00 | 39.0 | 49.28 | 41.38 |
| Clothing.... | 18.12 | 18.00 | 18.0 | 15.94 | 21.00 |
| Rent..... | 13.48 | 12.00 | 17 | 19.74 | 17.42 |
| Fuel ..... | 3.50 | 5.00 | 8.1 | 4.30 | 5.63 |
| Sundries. .. | 13.54 | 15.00 | 18.9 | 10.73 | 14.57 |

These percentages are all calculated from working-class family budgets, except in the case of Prussia, where a family of intermediate class was taken to give gross incomes of something like the same amount. The real measure of well-being probably consists, at least for men of the same race, in the amount which may be expended on the vague class of sundries; and in this comparison, Canada comes out well. The shewing would not have been so favorable had we taken the average of the five cities, for then it would have been 8.5 per cent of the income only.

The question of the value of these returns is almost settled by the large degree of correspondence between independently reached results; but the Provincial Statistician, Mr. Blue, was at the trouble to meet the objection that, to say nothing of the conclusions based on them, the figures themselves were untrustworthy, by carefully examining the food expenditures of various public institutions. The force of the objection is that while most householders can tell how much they spend on rent and fuel, and perhaps also on clothing, they can make a rough estimate only of the household expenditure on food. Mr. Blue went into the matter exhaustively and examined the food accounts of colleges, asylums, military barracks, etc., and embodied his conclusions in a paper read before the American Public Health Association, and reprinted in the Ontario Bureau of Statistics Report, 1886, in which he says:—

"Now let us see how the cost of food, as computed from the working men's returns, compares with its cost in the schools and colleges and public institutions. At the average of summer and winter returns in these, it is $44.17 (*per cap.*); at the prison's rate it is $35.51; at the asylum rate it is $47.12; at the infantry school rate it is $54.75; at the college winter rate it is $59. . . . The working man's average, $47.67 *per cap.*, is therefore something more than a probable one; it is well verified by statistics gathered from other sources, and I am disposed to think that the cost of living is better known and more accurately gauged in the families of the working classes than in the families of any other class in the community." . . . .

We are justified, therefore, in accepting the average budget based on these returns as representative of the actual expenditure of some hundreds of working men throughout Ontario. It is true, no doubt, that men capable of intelligently making such returns are likely to spend their incomes more rationally than others of their class; but the extravagances and waste of the less prudent and thrifty in part offset each other, and must for the rest be neglected. We may assume, therefore, that in the Province of Ontario 39.0 per cent. is expended on food, 18.0 per cent. on clothing, 8.1 per cent. on fuel, and 17 per cent. on rent; or if we take the average of the 4 year averages of the five important towns as our standard, 47.8 per cent. on food, 17 per cent. on clothing, 18.4 per cent. on rent, and 8.3 per cent. on fuel.

These percentages are not without meaning even as an indication of absolute well-being. The smaller the percentage expended on food and subsistence the larger the total provision for the wants of our nature. Here and there an individual may be found who stints himself of the imperious necessities of life to obtain some coveted comfort or luxury; but the great majority satisfy the lower wants first and rise to the higher if sufficient provision is made. Consequently, the smaller percentage in Canada expended on food is an indication of a higher well-being. But it is necessary to investigate still further to find the degree of well-being and to present quantities rather than percentages.

What value does the average Canadian receive in food, house accommodation, fuel and clothing for the percentages of income thus expended? This is not a question of prices, but of weights and measures. Prices are of importance only as they indicate whether an increased or decreased consumption of any article is due to a change in price or to an increased command over the goods of life. The increased consumption of tea and sugar, for instance, is due to the fall in price; but the increased consumption of coffee, in so far as it is not simply a transfer of taste from one article to another, shows an extending margin of consumption. An increase of consumption due to a fall in the price of an article does not necessarily mean that the citizens are better off. Their real wages and incomes have risen but their money wages may be constant; but an increased use of an article whose price has not fallen indicates an increase of money wages and a more extended command over the goods of life.

It is not possible, unfortunately, to enter into a detailed examination of the absolute values received in each class of expenditure. In the case of rent and food, we are able to present some of the more important items; but fuel and clothing remain indefinite.

The item of fuel is the only one which takes a higher percentage in Canada than in any other country. The cause is not an enhanced price, but the fact that a larger quantity must be used. The amount of fuel consumed per head of the population is unascertainable. From the mining statistics and the tables of trade and commerce, we can estimate how much coal, bituminous and anthracite, is used; but how many of the people of Canada use coal? Probably the majority of the population do not use it in any form; even in industry coal is not always used; and it is in the larger cities only that coal is used exclusively. The quantity of wood consumed as fuel is not ascertainable; and since the quantity varies according to the house and according to the habits of the individual, no estimates, even approximately correct, can be made.

Whether, under the head of fuel, lighting is also included, as it usually is in the statistics of other countries, is not stated ; but the omission is not of serious importance, because we are unable to discover how much the individual spends and what value he receives for his expenditure. The three chief illuminants, gas, electricity, and oil, are being used in increasing quantities. The Census Reports of 1891 give figures for the production of gas and electric lighting works; but there has been a very great extension in the use of electric lighting since 1891, and possibly some increase in the use of gas also ; and figures taken from the Census Reports would give a wrong impression. It is interesting to note that in spite of the increase in the use of these methods of lighting, the consumption of petroleum is increasing steadily year by year. The urban population of Canada (those residing in towns and villages of more than 1,500 inhabitants) has increased from 912 934 in 1881 to 1,390,910 in 1891 ; or from 21.1 per cent. to 28.77 per cent. of the population of the Dominion ; and the number of towns of more than 3,000 inhabitants which may be taken as the minimum for which gas or electric lighting is provided, has increased from 68 to 94. Gas lighting held its own during the decade 1881-1891, and electric lighting was practically introduced in the decade (in 1881 there were two men employed in electric lighting works ; in 1891 there were 1,190 ;) yet the consumption of petroleum increased *per capita* more than fifty per cent., although there was no corresponding decrease in the retail price. In 1882 the consumption was 2.0 galls. per head, in 1891 it was 3.2 galls., and in 1896 3.1 galls. (a decrease from 3.5 galls. in 1894 and 1895). The increased use of the more primitive illuminant, alongside of the development of the more modern methods, shews a real increase in well-being in the community.

The expenditure on clothing must remain in the obscurity of percentages. It might be possible, by help of the Census Reports and the trade tables, to determine how much cloth and clothing was manufactured or imported in the year 1891 ; but it is not possible to shew how much was consumed. Trade tables

are trustworthy only when they extend over a number of years, and speculative influences can be discounted. An alteration in the tariff, for instance, may affect the imports for a given year, as it did in the case of sugar, and strictly an average of several years ought to be taken. The census year is no more likely to escape such fluctuations than any other year; and it might be seriously misleading to take the manufacture and importation of textiles as typical. Moreover, there has not as yet been established in the matter of clothing any standard of consumption as has, in a measure, been done in the case of food. Caprice and local climatic causes have here an undue influence. All we can say is that in Canada the average family spends on the average $83.79 on clothing, the family expenditure in the United States being $112.23; in Great Britain, $80.59; in Germany, $57.21; in France, $72 60; in Belgium, $84.61; in Switzerland, $65.38*.

The statistics available for the further analysis of the expenditure on rent are not sufficient for the purposes of comparison either of classes or of different periods. With the exception of some interesting sociological studies of a portion of the city of Montreal by Ald. Ames of that city,† we have the Census Reports alone to rely on; and the Census Reports of 1881 offer but a very meagre amount of information. The Ontario tables quoted above shew that on the average in the province of Ontario the respectable working classes spend 17% of their income in rent. Since there is comparatively little class distinction in Canada, we might, perhaps, assume that 17% represents the proportion spent by the average Canadian on house rent. In the city below the hill in Montreal rental absorbs, according to Mr. Ames, 18% of the earnings:—"For families of the real industrial class 16 per cent. is a fair average. . . It is among the well-to-do and the very poor that rental is permitted to absorb from 20 to 25 per cent. of the earnings." (The City Below the Hill, p. 40). Mr.

*U. S. Commissioner of Labor, Report 1891, Vol. II., pp. 864-5.

† (1) The City Below the Hill: privately printed. (2) Incomes, Wages and Rents in Montreal (U. S. Department of Labor, Bulletin 14, Jan. 1898); and a lecture on House Accommodation which I have been privileged to see in manuscript.

Ames, in a letter in answer to some queries made, has further explained that the last sentence refers only to families with an annual income of $1000 or less. "My experience, he adds, has gone to prove that rental consumes from one-fifth to one-third of the income of the very poor. Then the proportion grows gradually less as we reach the classes where the family income runs from $8.00 to $12.00 per week. Those families receiving from $12.00 to $15.00 seem to pay a smaller proportion of income as rent, but classes receiving from $15.00 to $20.00 seem to grow ambitious and desire to move into larger quarters. I am of the opinion, although I have no facts to substantiate it, that if we were to take classes receiving annually $1000 a year and over, we would find the rental proportionately diminishing the higher we go" Thus, Mr. Ames's results hardly bear out Engel's law, that the percentage expended on rent is invarirbly the same whatever the income; and it appears necessary to modify the law, at least, if we admit subdivisions of the working classes. The proportion is highest for the very poor, varying from 25 to 30 per cent.; for the 'real industrial' classes it falls to 16 per cent.; and then rises to 25 per cent. for highly skilled mechanics, and then gradually falls for families whose income exceeds one thousand dollars.

Before we go on to enquire what sort of accommodation is obtained for this expenditure of income, it is necessary to verify the assumption made in last paragraph that there is comparatively little distinction of classes in Canada. In a sense this is an obvious fact, a matter of ordinary remark by every observer. While there are few in Canada who are very wealthy, there are probably as few who are in actual distress. The Census Report, 1891, enables us to verify to a certain extent this common observation. For each census district we have given, in a series of tables, the number of houses and the number of rooms in each house. It would be obviously impossible, having regard to the limits of time and space, to analyze the returns for the whole Dominion; and since in the country districts there is little difference of class, it is necessary only to examine the returns for the

larger towns. In the large towns, if anywhere, we shall find distinctions of class appearing. The first of the following tables is taken directly from the Census Reports; the second is based on it and expresses the same facts in terms of percentages which have been calculated:—

| City. | Population.* | Total No of Houses. | No. of Houses with Rooms— | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | 6—10 | 11—15 | Over 15. |
| Vancouver | 13709 | 2231 | 140 | 148 | 194 | 331 | 223 | 1023 | 81 | 81 |
| Winnipeg. | 25639 | 4543 | 34 | 296 | 367 | 702 | 594 | 2309 | 162 | 79 |
| St. John . | 40385 | 6630 | 1 | 135 | 467 | 723 | 740 | 2996 | 1012 | 339 |
| Halifax.... | 38495 | 5181 | 3 | 63 | 126 | 447 | 523 | 3351 | 529 | 108 |
| Toronto .. | 144023 | 25810 | 30 | 184 | 752 | 2480 | 3094 | 17070 | 1749 | 451 |
| London .. | 22281 | 4317 | 6 | 54 | 128 | 434 | 775 | 2603 | 223 | 80 |
| Kingston . | 19263 | 4725 | 37 | 148 | 445 | 700 | 708 | 2397 | 240 | 50 |
| Hamilton.. | 47245 | 9221 | 8 | 72 | 279 | 870 | 1779 | 5596 | 488 | 109 |
| Montreal.. | 182695 | 31931 | 153 | 1990 | 4672 | 7815 | 3325 | 10782 | 2542 | 651 |
| Quebec .... | 63090 | 8313 | 43 | 479 | 827 | 1508 | 791 | 3373 | 954 | 440 |
| Ottawa ... | 37269 | 6557 | 17 | 150 | 246 | 911 | 1025 | 3485 | 583 | 140 |

* The populations are taken from Table II, Vol. 1, Census Report, 1891.

| City. | Persons to a House. | Percentage of Total Number of Houses with Rooms | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6—10 | 11—15 | Over 15. | 4 and less. | 10 and more. |
| Vancouver | 6.1 | 6.2 | 6.6 | 8.7 | 14.8 | 10.0 | 45.8 | 1.6 | 1.6 | 36.3 | 3.2 |
| Winnipeg. | 5.6 | 0.7 | 6.5 | 8.0 | 15.4 | 13.0 | 50.8 | 3.5 | 1.7 | 30.6 | 5.2 |
| St. John... | 6.0 | 0.0 | 2.0 | 7.0 | 10.9 | 11.1 | 45.1 | 15.2 | 5.1 | 19.9 | 20.3 |
| Halifax ... | 7.4 | 0.1 | 1.2 | 2.4 | 8.6 | 10.0 | 64.6 | 10.2 | 2.1 | 12.2 | 12.3 |
| Toronto... | 5.5 | 0.1 | 0.6 | 2.9 | 9.6 | 11.9 | 66.1 | 6.7 | 1.7 | 13.2 | 8.4 |
| London . . | 5.1 | 0.1 | 1.2 | 2.9 | 10.0 | 17.9 | 60.2 | 5.1 | 1.8 | 14.2 | 6.9 |
| Kingston . | 4.0 | 0.7 | 1.1 | 3.1 | 16.4 | 16.4 | 50.7 | 5.0 | 1.2 | 22.3 | 6.2 |
| Hamilton.. | 5.1 | 0.0 | 0.7 | 3.0 | 9.4 | 19.2 | 61.7 | 5.2 | 1.0 | 13.1 | 6.2 |
| Montreal . | 5.7 | 0.4 | 6.2 | 14.6 | 24.4 | 10.4 | 33.7 | 8.0 | 2.0 | 45.6 | 10.0 |
| Quebec . . . | 7.5 | 0.5 | 5.7 | 9.9 | 18.1 | 9.5 | 40.5 | 11.4 | 5.2 | 34.2 | 16.6 |
| Ottawa ... | 5.6 | 0.2 | 2.2 | 3.7 | 13.8 | 15.6 | 53.1 | 8.8 | 2.1 | 19.9 | 10.9 |

With the exception of four cities, Vancouver, Montreal, Quebec and St. John, more than half of the population live in houses containing from 6 to 10 rooms; in the case of Toronto the percentage rises to 66 per cent; while in three others, Halifax, London and Hamilton, the percentage exceeds 60. Those cities

which shew a low percentage of houses containing 6 to 10 rooms per house (which gives something more than the standard accommodation of one room one person) shew generally a high percentage of houses of four rooms or less, and also of houses of more than 10 rooms. Thus, in Montreal, 45.6 of the houses are of 4 rooms and less; Quebec, St. John, Vancouver, Winnipeg and Ottawa, also give high percentages of houses of rather less than the standard accommodation; and with the exception of Vancouver and Winnipeg, where the poor accommodation is, as we shall see, due to the newness of the cities, the same towns shew a high percentage of large houses of more than ten rooms. Montreal has a percentage of 10.0; Quebec, 16.6; Ottawa, 10.9; and St. John, the astonishing percentage of 20.3. Halifax is the only other city where the percentage of large houses reaches double figures. If we combine the results of the last table and recognize three classes of houses only, those of 4 rooms or less, those of 5 to 10 rooms, and those with more than ten, we shall see at a glance where the conditions are extreme and where the arithmetical average expresses the truth of the situation :—

| | 4 rooms or less. | 5 to 10 rooms. | More than 10 rooms. |
|---|---|---|---|
| Vancouver | 36.3 | 55.8 | 3.2 |
| Winnipeg | 30.6 | 63.8 | 5.2 |
| St. John | 19.9 | 56.2 | 20.3 |
| Halifax | 12.2 | 64.6 | 12.3 |
| Toronto | 13.2 | 78.0 | 8.4 |
| London | 14.2 | 78.1 | 6.9 |
| Kingston | 22.3 | 67.1 | 6.2 |
| Hamilton | 13.1 | 80.9 | 6.2 |
| Montreal | 45.6 | 44.1 | 10.0 |
| Quebec | 34.2 | 50.0 | 16.6 |
| Ottawa | 19.9 | 68.7 | 10.9 |

It appears, therefore, that class distinctions are marked in three or four towns only: in St. John, Montreal, and Quebec, and possibly in Ottawa; that the three best housed towns where there are few extremes of wealth and poverty, are Toronto, London and Hamilton—which, with Kingston and Ottawa,

where also the conditions do not show violent extremes, are the five towns selected from the Ontario Bureau of Statistics Reports for detailed analysis. It is probable that the very large percentage of large houses in St. John is an indication, not of a large wealthy class, but of lack of prudence and foresight in the inhabitants in the years which followed the great fire. We might therefore conclude that in two towns only, Quebec and Montreal, do the extremes of wealth and poverty show themselves; and that the average condition is also the condition of the great majority of the inhabitants of Canada. We might, perhaps, also conclude that the average income obtained from the returns made to the Ontario Bureau is not far below the average income in Canada. Mr. Ames shows that in the district he has investigated there is a weekly average income of $10.20 per family, an average monthly rental of $8.73 per family, or 18 per cent. of the family income, and an accommodation of 5.02 rooms per family (U. S. Bulletin of Labor, p. 44. The average weekly income of the towns in Ontario is nearly $9.00, of which 17 per cent. is expended on rent in places where rents must be much lower than they are in industrial districts of Montreal, and where accordingly better accommodation will be given for the money. We may readily infer that the returns have been made by the occupants of houses of 7 or 8 rooms; and an overwhelming proportion of the inhabitants of the towns, of which an analysis of the house accommodation has been made above, occupy houses containing from 5 to 10 rooms. Since, according to Engel, and according also to the best canons of local taxation, the expenditure on house rent is the best indication of income, we might be safe in concluding that the average income set down above is the average for Canada; but at the best the conclusion is problematic and based on a series of assumptions and inferences from data which are themselves only approximately correct.

The main question is the actual accommodation obtained for

the expenditure. The best test, perhaps, would be the cubic feet of air space obtained for a given rent.*

But statistics are lacking in Canada to determine the actual space received in return for the payment made. There may be more actual air space in a log cabin or a dug out of one room in the North-West and British Columbia than in a three or four roomed house in a back tenement in Montreal; and the general sanitary conditions are without doubt superior. Mr. Ames has taken the provision of water closets as his test, and shews how a smaller house with sanitary conveniences may rent for as much as a larger without them. But his investigation was confined to a section of Montreal only. For the rest of the city, and for the Dominion as a whole, we must rest content with a less satisfactory test, viz., the number of rooms, the material of construction, the number of stories, the number of families in each house, and the number of persons to a house and to a room.

The average house in Canada is constructed of wood, is of one story, or a story and a half, contains probably from 5 to 10 rooms, more likely 5 than 10, and accommodates under its roof 1.08 families, or 5.6 persons, and thus gives the standard accommodation—one room one person. The standard of accommodation is rising. In 1881 there were 1.10 families under each roof and 5.8 persons. The one story house seems to be going out of fashion, for while 39 per cent. of all the inhabited houses are one story buildings, more than 50 per cent. (23,227 out of 46,000 classified) of the uninhabited houses are of one story only, and 33 per cent. only (2,704 out of 8,077 enumerated) of the houses under construction. . (Census Bulletin, No. 6). It is, moreover, a well recognized fact that the sanitary conveniences are being improved. So that we may conclude that the people of Canada are receiving better value for their money, or that through increased prosperity they are able to spend a larger absolute amount in house rent though, perhaps, the percentage of their expenditure on house rent is decreasing.

*The poor probably pay more for rent, according to this standard, than the rich It has been found by comparison in Vienna that in a house in one of the slum districts each cubic metre of air space cost 3 fl. 24 kr., while in a house in the most fashionable Ringstrasse, and on the first floor, the cubic metre cost 2 fl. 85 kr. only. (Schönberg's Handbuch, I., p. 700.)

Wooden houses constitute 81.6 per cent. of the total number; brick houses 15.34, and stone houses 3.1. The brick and stone houses are probably mainly in the larger cities and occupied by the wealthier classes. Thirty-nine per cent. of the total houses inhabited are of one story, while 43 per cent. of the wooden houses are of that humble size, and 19 per cent. and 20 per cent. only of the brick and stone houses fail to reach the dignity of a second story or even of an additional half story. The story and a half and two story buildings are 57 per cent. of the whole, but 60 per cent. of the stone and 67 per cent. of the brick houses are of these dimensions. Of the houses which have three stories or more 14,211, or 59 per cent., are brick, 4,658, or 19 per cent. are stone, and 5,746 only, or 22 per cent., are of wood.

The Census Reports do not enable us to discover whether there is a larger number of rooms or of stories in a stone or brick house then in a wooden house. Probably, the advantage in size is in favor of the stone and brick houses; but there is no definite information on the subject, and we must rest content with the statement given in the Census Report, 1891 (Vol. IV., Table A., pp. 378, 379) of the percentage of houses of different sizes in the several provinces of the Dominion :—

| | Percentages of Houses with Rooms— | | | | | | | | Of Houses with Stories— | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6-10 | 11-15 | Over 15. | 1 | | 3 | 4 |
| Canada..... | 2.9 | 8.0 | 11.0 | 15.8 | 12.2 | 43.3 | 5.6 | 1.2 | 63.5 | 33.6 | 2.5 | 0.4 |
| Br. Columbia.. | 21.1 | 13.6 | 10.2 | 13.5 | 11.4 | 25.9 | 2.6 | 1.6 | 72.4 | 26.3 | 1.2 | 0.1 |
| Manitoba..... | 12.0 | 20.2 | 17.3 | 17.0 | 10.1 | 21.4 | 1.3 | 0.6 | 56.9 | 42.1 | 0.8 | 0.2 |
| N. Brunswick.. | 2.4 | 8.7 | 9.8 | 14.4 | 11.6 | 43.2 | 8.2 | 1.7 | 79.9 | 16.7 | 3.0 | 0.4 |
| Nova Scotia.... | 1.0 | 5.4 | 8.4 | 15.4 | 12.9 | 50.2 | 5.8 | 0.9 | 85.7 | 12 7 | 1.5 | 0.1 |
| Ontario ..... | 1.2 | 5.1 | 7.9 | 13.3 | 12.7 | 52.3 | 6.3 | 1.2 | 52.4 | 45.1 | 2.4 | 0.1 |
| P. E. Island ... | 0.9 | 7.3 | 9.7 | 16.4 | 12.8 | 45.7 | 6.5 | 1.7 | 80.8 | 17.7 | 1.4 | 0.1 |
| Quebec ..... | 3.7 | 10.9 | 16.2 | 20.2 | 11.7 | 31.2 | 4.7 | 1.3 | 69.8 | 25.9 | 3.4 | 0.9 |
| The Territories. | 19.5 | 24.3 | 16.7 | 13.3 | 8.1 | 14.1 | 1.3 | 0.7 | 66.9 | 30.5 | 0.5 | 0.1 |

The house accommodation afforded varies from province to province. The largest percentage of brick houses occurs in Ontario, the smallest in Nova Scotia, where 99.4 of the houses are built of wood. The largest percentage, though not the

greatest absolute number of stone houses, are found in the province of Quebec, the smallest, 0.1 per cent., in British Columbia, New Brunswick, and Prince Edward Island. The proportion of houses of one story only is greatest in the Maritime Provinces, where Nova Scotia heads the list with 85.7 per cent., and Prince Edward Island and New Brunswick follow with 80.8 per cent. and 79.9 per cent. Manitoba and Ontario show the largest percentages of two story houses, while Quebec and New Brunswick show the highest percentages of three storied dwellings. Quebec contains 73 per cent. of all the 4-storied buildings in Canada; and twice as high a percentage of the buildings in the province are of that height or higher as in any other province. Quebec and the North-West Territories have highest average number of persons under one roof (6.0), the Maritime Provinces coming next, and British Columbia giving the low number of 4.9. But British Columbia is the province where the largest number of one-roomed houses exist. Twenty-one per cent. of the houses there have one room only, and 58.4 per cent. have four rooms or less. In Manitoba, which stands next to British Columbia in the number of persons to the house (5.2), 12.0 per cent. of the houses are one roomed, and 66.5 per cent. have four or less. Prince Edward Island, on the other hand, which crowds 5.9 people under every roof, sees that they have some room under it, for less than one per cent. (0.9) of her houses are of one room, and 65.3 of her houses have more than four rooms.

These facts are collected in the following table:—

COMPARISON OF HOUSE ACCOMMODATION IN THE PROVINCES.

| | Stone Houses. | Brick Houses. | Wooden Houses. | One room. | 4 rooms or less. | Persons under one roof. |
|---|---|---|---|---|---|---|
| Canada ..... | 3.0 | 15.4 | 81.5 | 2.9 | 37.7 | 5.6 |
| British Columbia.. | 0.1 | 2.3 | 97.6 | 21.1 | 58.4 | 4.9 |
| Manitoba ..... | 0.9 | 3.7 | 95.2 | 12.0 | 66.5 | 5.2 |
| New Brunswick... | 0.1 | 1.6 | 98.2 | 2.4 | 35.3 | 5.8 |
| Nova Scotia ..... | 0.2 | 0.3 | 99.4 | 1.0 | 32.2 | 5.7 |
| Ontario ..... | 3.3 | 21.1 | 75.5 | 1.2 | 27.5 | 5.2 |
| Pr. Edward Island | 0.1 | 0.4 | 99.5 | 0.9 | 34.7 | 5.9 |
| Quebec..... .... | 5.0 | 17.8 | 77.1 | 3.7 | 50.0 | 6.0 |
| The Territories.... | 1.0 | 1.0 | 96.0 | 19.5 | 73.8 | 6.0 |

From these figures it is possible to construct an index number which shall express the relative house accommodation of the various provinces more readily than the actual figures. There are four possible tests within our reach :—The material of which the dwelling is constructed, the number of rooms it contains, the number of stories in it, and the number of people who inhabit it. But these are obviously not all of equal importance. The number of rooms is of much greater importance than the number of stories. A house of five rooms with only one story is better than a house of three or four rooms with a story and a half or two stories ; and for many purposes it is indifferent whether the house is built of wood or of stone, or brick. The material out of which a house is built is determined sometimes by the relative cheapness of materials on the spot and sometimes by municipal regulations about a fire district. But from the figures quoted above, it is evident that a stone or brick house is at least more fashionable than a wooden house ; and in the slum districts of our cities the worst houses are built of wood. We must allow some importance to these two considerations ; but not by any means as much as to the others. If to the two taken together we allow half as much importance as to each of the others, taken separately, we will not, perhaps, exaggerate its importance ; but in case of error, the index number will be stated, both including and excluding these minor considerations. The figures quoted above are taken negatively, *i. e.*, instead of saying how many houses have four rooms or less, we calculate on the number of houses which have more than four rooms ; but this is a matter of arithmetical detail. The average for Canada is expressed as 100 in the cases of the number of houses containing more than four rooms and of the number of persons in each house, and by 50 in the case of the two minor considerations :—

| | % of houses with more than four rooms. | Index No. | % of persons to house. | Index No. | % of houses of more than one story. | % of houses of material other than wood. | Index No. |
|---|---|---|---|---|---|---|---|
| Canada ..... | 62.3 | 100 | 5.6 | 100 | 36.5 | 18.5 | 50 |
| Brit. Columbia | 41.6 | 66.7 | 4.9 | 114.6 | 27.6 | 2.4 | 19.6 |
| Manitoba .... | 33.5 | 53 7 | 5.2 | 107.6 | 40.1 | 4.8 | 33.7 |
| N. Brunswick. | 64.7 | 102.2 | 5.8 | 96.4 | 20.1 | 1.8 | 16.1 |
| Nova Scotia .. | 67.8 | 107.2 | 5.7 | 98.4 | 14.3 | 0.6 | 10.6 |
| Ontario ..... | 72.5 | 116.3 | 5 2 | 107.6 | 47.6 | 24.5 | 65.7 |
| P. E. Island .. | 65.3 | 104.8 | 5.9 | 94.9 | 19.2 | 0.5 | 13.8 |
| Quebec ..... | 50.0 | 80.2 | 6.0 | 93.3 | 30.2 | 22.9 | 51.2 |
| Territories.... | 26.2 | 42.0 | 6.0 | 93.3 | 33.1 | 4.0 | 28.1 |

The index of relative house accommodation of the provinces would be therefore according as we did or did not include the minor considerations expressed in the first or in the second column below :—

| | Two Considerations. | Four Considerations. |
|---|---|---|
| Canada ..... | 200 | 250 |
| British Columbia ..... | 181.3 | 199.9 |
| Manitoba ..... | 161.3 | 195.0 |
| New Brunswick..... | 198.6 | 214.7 |
| Nova Scotin..... | 205.6 | 216.2 |
| Ontario ..... | 223.9 | 289.6 |
| Prince Edward Island.. | 199.7 | 213.5 |
| Quebec ..... | 173.5 | 224.7 |
| Territories ..... | 135.3 | 163.4 |

The inclusion of the minor considerations reduces the rank of all the Maritime Provinces, and raises Quebec from one of the lowest to the second place, and still further increases the lead of the Province of Ontario. In all probability the index number depending on the two considerations alone gives the fairest representation of relative housing in the various provinces.

Though the item of food continues, whatever the income, to absorb the largest share of individual and national income, our information on this point is far from being complete. Practically we may say that so far as the foodstuffs consumed in Canada are produced in Canada we have no adequate information. Esti-

mates have been made of the consumption of wheat and potatoes; but too much reliance should not be placed upon them. The consumption of meat might be approximately estimated after an elaborate calculation, taking into account exports and imports and annual mortality among farm stock; but to give the estimate even a semblance of accuracy we require to have at least as complete an enumeration of the stock in the country during successive years as we have for the isolated census years. Of the consumption of fish and game, of butter and eggs, and milk and cheese and vegetables, we have no means whatever of forming an estimate; and it is doubtful whether such an estimate can be formed so long as 45 per cent. of the population are engaged in, or dependent on, agriculture. The only accurate statistics we have of the consumption of food are those relating to articles not produced in Canada at all, or produced under such conditions that the whole industry is under the constant supervision of the government. We can tell how much tea and sugar and coffee, how much beer and spirits and tobacco, how much wine and dried fruit is consumed in Canada; and it is fortunate that these are the articles, the large consumption of which indicates prosperity. We are not concerned with the ethical question whether the consumption of spirits is right or wrong. As a matter of fact, and many a Finance Minister has had to confess it with chastened sorrow, an increased consumption of intoxicants is a sign of increasing prosperity.

Bread stuffs and meats are for English speaking people necessities, and a diminution in the quantity would indicate, or at least might indicate, increasing prosperity. The poorer a nation or a family is the larger the proportion of its income it spends on bread and potatoes.* This is one of the established

*Prof. Lexis, in his article on Consumption, Schönberg's Handbuch I., 697 *n.* quotes the following estimate of the distribution of expenditure on food by various classes :—

| *Expenditure on Food.* | *Bread.* | *Potatoes.* | *Meat.* |
|---|---|---|---|
| (6 persons) 2,175 marks | 14.9 | 4.1 | 26.5 |
| 4 persons) 1,285 " | 10.6 | 2.4 | 29 0 |
| 688 " | 31.3 | 4.8 | 17.0 |
| 403 " | 38.7 | 10.3 | 11.6 |
| 395 " | 39.4 | 15.9 | 3.5 |

conclusions of the theory of consumption; and it stands to reason that the more of the luxuries of the table a family consumes the less need has it for the grosser necessaries. But this conclusion must be taken to apply to percentages rather than to absolute amounts; for where the great majority of the population are in the condition of working class people, prosperity may show itself both in a decreasing percentage and in an increasing absolute amount. With a better use of the consumption power at their command, probably the working classes in America would come to consume less of the grosser necessaries of bread and potatoes and meat, and rise to a higher conception of well-being than mere profusion. The large consumption of bread stuffs in the exporting countries is due to profusion rather than to a low standard of living. It exists alongside of a large consumption of the comforts and commoner luxuries of the table.

Speaking in general terms, Europeans eat more bread and potatoes than Americans. Australians consume more meat and less bread and potatoes than either the Americans or the Europeans. In Canada the consumption both of bread and potatoes is, according to statistics, high, probably much too high, considering the standard of living common in the community. In the Statistical Year Book for 1891 the average consumption, calculated by deducting the net exports and the estimated amount retained for seed from the estimated crop during the 10 years, 1881-1891, is given as 6.75 bushels per head :—

CONSUMPTION PER HEAD, IN BUSHELS.

| | | | | | |
|---|---|---|---|---|---|
| 1881 | 6.48 | 1884 | 8.96 | 1888 | 6.02 |
| 1882 | 8.19 | 1885 | 7.41 | 1889 | 5.38 |
| 1883 | 6.16 | 1886 | 5.70 | 1890 | 6.60 |
| | | 1887 | 6.63 | | |

But the authors of this estimate do not themselves place much reliance on it; and if it were accurate, one would almost be justified in inferring that in the lean years Canada was on

the verge of starvation ; for the consumption varies more than three bushels and a half. The probability is, as the authors suggest, that the crop estimates are by no means accurate. In the following year, in 1892, this estimate is dropped, and a comparative estimate of the consumption of wheat per head in various countries gives Canada an average consumption of 5.5 bushels per head, which is continued down till 1895, the last year in which this comparative estimate appears. The estimate continues to be put forward as an approximation only ; but no reason is offered for the reduction from 6.75 to 5.5 bushels.

The consumption of potatoes may be estimated in the same way for the single year 1891, the census year. This gives an average consumption of 10 bushels per head, or about 600 pounds —undoubtedly, by comparison with other nations which have a similar or a lower standard of living, an excessive estimate. If the estimates framed annually by the Statistical Bureaus of Ontario and Manitoba are scarcely trustworthy, the casual estimates of a census enumerator, or of the farmer he questions, are still less likely to be trustworthy ; and all such estimates are liable to err on the side of excess.

Mr. Mulhall gives the annual consumption of meat in Canada at 90 lbs. per head, as compared with 109 lbs. in the United Kingdom, 150 lbs. in the United States, and 276 lbs. in Australia ; but imagination fails to suggest the source from which such an estimate can be made for Canada.

The statistics at our disposal regarding the consumption of certain typical comforts and luxuries, is as full as occasion requires, and as accurate as returns made at the customs or to the internal revenue officers usually are. The list might be made indefinitely long, but we confine ourselves to such as are typical and in fairly common use,—sugar and tea and coffee, wine and beer, and spirits and tobacco. Dried fruit we shall also include, selecting that rather than green fruit, the extension in the use of which is one of the best signs of a prosperous consumption, because, in the case of green fruits, we have estimates of value only which can be used, while the quantity of dried fruits can

be more readily estimated in a single one of the tables of weights and measures. The tables from which the per capita consumption of sugar, tea, coffee and dried fruit has been calculated, were compiled from the Annual Sessional Papers on Trade and Commerce; the per capita consumption of beer, spirits, etc., is the calculation of the inland revenue officials, and may be found in Statistical Year Book for the current year.*

The consumption of these articles is recognized as one of the best tests of the prosperity of a country. The middle classes everywhere are well provided with the comforts and decencies of life, in which class these articles are placed, although sugar is rapidly becoming a necessary of life; and an extension of the consumption of these goods means that the working classes are consuming more, the middle class, it being presumed already, using as much as they desire. In a country like Canada, where as we have seen there are few extremes of wealth, an increased consumption means that the whole body of the people are consuming more.

An increased consumption of any article may mean one of three things,—(1) it may result from a fall in price, which enables the people to consume more without spending more; (2) it may mean a rise in the average income, which enables the people to spend more on one article than they have been doing, without curtailing their consumption of other articles; (3) it may mean simply that the form of consumption has changed and that the well-being of society is the same, or but slightly increased. In all probability, the increased use of cocoa, from the value of $44,249 in 1880† to $158,849 in 1896 has been due to a mere change in the form of consumption; and the addition of this amount to the consumption of the community probably does not indicate a corresponding increase of spending power. The increase in the use of sugar and tea is due, not to increased

*I take this opportunity of acknowledging my indebtedness to the Dominion Statistician, Mr. George Johnson, whose work I have freely used in the preparation of this paper.

†Average of three years.

spending power, but almost entirely to a fall in price. The per capita cousumption of 1896, 47 lbs. of sugar and 4.4 lbs. of tea, cost no more than the 26 lbs. of sugar and the 2.7 lbs. of tea in the year 1880. The increased use of tobacco, of coffee, and the but slightly decreased consumption of spirits, in spite of a large rise in price, indicate a larger spending power. An attempt has been made in the third of the following tables to indicate how far the increased consumption is due to a fall in prices, the prices being taken from a table of Montreal prices given in the Statistical Year Book of 1896.

CONSUMPTION PER CAPITA OF CERTAIN ARTICLES IN CANADA.

| | Tea (lbs.) | Coffee (lbs.) | Sugar (lbs,) | Dried Fruits (lbs). | Beer (gals.) | Spirits (gals ) | Wine (gals.) | Tobacco (lbs)- | Cigars (No ) |
|---|---|---|---|---|---|---|---|---|---|
| 1880 | 2.7 | 0.40 | 26 | 1.9 | 2.25 | 0.71 | 0.08 | 1.94 | ..... |
| 1881 | 3.8 | 0.47 | 31 | 3.0 | 2.29 | 0.92 | 0.10 | 2.03 | ..... |
| 1882 | 4.3 | 0.71 | 30 | 3.4 | 2 75 | 1.01 | 0.12 | 2 15 | ..... |
| 1883 | 4.0 | 0.60 | 34 | 5.0 | 2.88 | 1.09 | 0.13 | 2.28 | ..... |
| 1884 | 3 8 | 0.53 | 38 | 5.2 | 2.92 | 1.00 | 0 12 | 2.48 | 19 |
| 1885 | 4.0 | 0 94 | 43 | 4.1 | 2.64 | 1 13 | 0.11 | 2.62 | 17 |
| 1886 | 4.9 | 0.85 | 38 | 3.6 | 2.84 | 0.71 | 0 11 | 2.05 | 20 |
| 1887 | 3 8 | 0.41 | 43 | 4.2 | 3.08 | 0.75 | 0 09 | 2.06 | 18 |
| 1888 | 3 7 | 0.60 | 43 | 4.5 | 3.25 | 0.64 | 0.09 | 2.09 | 19 |
| 1889 | 3 6 | 0.66 | 47 | 4.6 | 3.26 | 0 78 | 0.10 | 2 15 | 19 |
| 1890 | 3.8 | 0.66 | 35 | 4.7 | 3.36 | 0.88 | 0.10 | 2 14 | 20 |
| 1891 | 3.7 | 0.69 | 40 | 4.8 | 3 79 | 0.74 | 0.11 | 2.29 | 20 |
| 1892 | 4.4 | 0.73 | 68 | 4.7 | 3.52 | 0.70 | 0.10 | 2.29 | 21 |
| 1893 | 3 6 | 0.77 | 51 | 4.4 | 3.48 | 0 74 | 0.09 | 2.31 | 23 |
| 1894 | 4.1 | 0 70 | 61 | 5.3 | 3.72 | 0.74 | 0.09 | 2.26 | 23 |
| 1895 | 4.0 | 0.72 | 70 | 5.2 | 3 47 | 0.67 | 0.09 | 2.16 | 21 |
| 1896 | 4.4 | 0.70 | 47 | 5.6 | 3 53 | 0 62 | 0.07 | 2.12 | 21 |

These tables are sufficiently clear to explain themselves; but it should be observed that for some reason the year 1880, which has been chosen as starting point, is an exceptional year of low consumption, as we shall see more clearly when we come to present an Index No. of consumption; and it has the additional disadvantage of being the year of high prices in sugar, which was then 20 per cent. higher than in 1875, and higher than it has been since.

It would be interesting to compare the consumption of the different provinces; but there are no statistics available for such a comparison. Mr. Johnson, in his *Graphic Statistics of Canada* (1886) has shewn the relative provincial consumption of wine and beer, and spirits and tobacco, in a graphic form; and from his representation we learn that on the average of 19 years to 1886, each inhabitant of Ontario drank 1.11 gals. of spirits, 0.4 gals. of wine, and 3.2 gals. of beer, and smoked 1.8 lbs. of tobacco; and so on for the other provinces as in the accompanying table:—

PER CAPITA CONSUMPTION ACCORDING TO PROVINCES.

| Prov. | Spirits (gal.) | Beer (gal.) | Wine (gal) | Tobacco (lbs.) |
|---|---|---|---|---|
| Ontario ..... | 1.11 | 3 2 | 0.4 | 1.8 |
| Quebec..... | 1.68 | 1.9 | 0.28 | 2.4 |
| New Brunswick.. | 0 89 | 0.66 | 0 08 | 2.17 |
| Nova Scotia .... | 0.93 | 0.7 | 0 07 | 1 7 |
| P. E. Island .... | 0.52 | 0.46 | 0.03 | 1.4 |
| Manitoba..... .. | 0 68 | 1.7 | 0.06 | 2 6 |
| Brit Columbia .. | 1.45 | 3 77 | 0.62 | 3.0 |

In all probability this proportion holds in 1898 as in 1886; and Mr. Johnson's conclusions are still true:—

"Ontario drinks nearly three times more beer than spirits; Quebec, nearly as much spirits as beer; New Brunswick, more spirits than beer; Nova Scotia, more beer than spirits; Prince Edward Island, more spirits than beer; and Manitoba and British Columbia, more beer than spirits," p. 36. To which we might add that, according to this shewing, Prince Edward Island and New Brunswick are the most temperate of the provinces.*

*The consumption of spirits in the Maritime Provinces and in Quebec is probably greatly underestimated. The figures above shew only the consumption on which duty was paid; but there has always been a large amount smuggled into these provinces from St. Pierre which exists practically as an entrepot for smuggling. Probably 15/16ths of the imports of the island are smuggled into Canada and Newfoundland. In 1885 the amount intended to be smuggled exceeded that proportion. It is said that half the spirits and tobacco consumed in Quebec pays no duty. Since 1890 the import trade of St. Pierre has fallen 50 per cent. in consequence of the increased activity of the Canadian revenue cruisers preventing the usual exports.

It is, unfortunately, not possible to compare the quantities consumed of the articles enumerated with their retail prices to ascertain exactly the relation between prices and consumption. Where prices have fallen, it is generally assumed that the wholesale prices have fallen further and more rapidly than retail prices, though, in the case of sugar, all but the very poorest who may buy in very small quantities have benefitted to the full extent of the fall. Where prices have risen, retail prices may have risen higher than wholesale, or not so far, according to circumstances. Tobacco has probably risen higher in retail price than in wholesale; but the dealers in cigarettes last year were not able to raise prices to follow the wholesale price. The following comparison, however, is with Montreal wholesale prices as stated in the Statistical Year Book, 1896:—

CONSUMPTION AND PRICES.

| YEAR | COFFEE | | SUGAR. | | TEA. | | TOBACCO. | | SPIRITS. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Consumption per head, lbs. | Price per lb. | Consumption per head, lbs. | Price per lb. | Consumption per head, lbs. | Price per lb. | Consumption per head, lbs. | Price per lb. | Consumption per head, gal. | Price per gal. |
| 1880 | .4 | 27 cts. | 26 | 10½ cts | 2.7 | 51 | 1.94 | 54 cts | 0.71 | $1 50 |
| 1881 | .47 | 25 | 31 | 10 | 3.8 | 52 | 2 03 | 55¼ | 0.92 | 1.60 |
| 1882 | .71 | 23 | 30 | 9½ | 4.3 | 51 | 2.15 | 57½ | 1.01 | 1.60 |
| 1883 | .6 | 22 | 34 | 9 | 4 0 | 51 | 2.28 | 47 | 1.09 | 1.60 |
| 1884 | .53 | 21 | 38 | 7⅞ | 3.8 | 51 | 2.48 | 53¼ | 1.00 | 1.60 |
| 1885 | .94 | 20 | 43 | 7 | 4.0 | 51 | 2.62 | 51 | 1.13 | 1.67 |
| 1886 | .85 | 19 | 38 | 6⅛ | 4.9 | 49 | 2.05 | 53 | 0.71 | 1 81 |
| 1887 | .41 | 24 | 43 | 6¼ | 3.8 | 43 | 2.06 | 51 | 0 75 | 1 81 |
| 1888 | .6 | 25 | 43 | 7¼ | 3.7 | 45 | 2.09 | 51 | 0 64 | 1 81 |
| 1889 | .66 | 26 | 47 | 8 | 3 6 | 45 | 2.15 | 51 | 0.73 | 1.83 |
| 1890 | .66 | 26 | 35 | 6¾ | 3 8 | 45 | 2.14 | 51 | 0.88 | 1.84 |
| 1891 | .69 | 27 | 40 | 6 | 3.7 | 42 | 2 29 | 53½ | 0.74 | 2.48 |
| 1892 | .73 | 29 | 68 | 4½ | 4.4 | 39 | 2.29 | 56 | 0.70 | 2 88 |
| 1893 | .77 | 29 | 51 | 4 8/16 | 3.6 | 38½ | 2.31 | 54½ | 0.74 | 2.53 |
| 1894 | .7 | 28 | 61 | 4 1/16 | 4.1 | 38½ | 2.26 | 53½ | 0.74 | 2 51 |
| 1895 | .72 | 27 | 70 | 4 | 4 0 | 35½ | 2.16 | 56 | 0 67 | 2 51 |
| 1896 | .70 | 26 | 47 | 4⅛ | 4.4 | 33½ | 2.12 | 56 | 0.62 | 2.68 |

From this table it appears that though the price of coffee has not declined the consumption has increased 80 per cent., shewing at once an increased desire for coffee and a larger spending power in the community. This is probably a real increase in the consumption of the nation and not a transfer of taste ; for cocoa and tea, the substitutes for coffee, have also been consumed in increased amounts, and there has been no such diminution of consumption of alcoholie drinks, for which coffee may be regarded as a substitute, as would set free such an amount of consuming power as would purchase the additional quantity of coffee. On the contrary, although the consumption of spirits has declined somewhat (13 per cent. since 1880), more is being spent on spirits to-day per head than in 1880. The price has increased 78 per cent., and had the consumption moved downwards at the same rate as the price moved upwards, the quantity used in 1896 should have been 44 per cent. less than in 1880. The decrease, instead of shewing a diminution of consumption power, indicates either an increase of money to spend or a growing desire on the part of the people for spirits such as would lead them to transfer their taste to alcohol from some other article. In face of the temperance sentiment of the country, it is improbable that the desire has increased, and we may safely conclude that the relation between consumption and prices of spirits indicates increased consumption power. The slight increase in the consumption of tobacco (11 per cent.), in spite of a rise in price, points to the same conclusion, viz, that the nation is growing more prosperous and has a larger income to expend. On the other hand, the increased consumption of tea and sugar justify no such conclusion. They, of course, indicate a higher level of general well-being, but not an increased consumption power on the part of the community. They afford no evidence against such an increase of income ; they simply do not afford any evidence in its favor. The consumption of sugar has increased almost in the same rates as the price has declined. The consumption of 1895 has risen 168 per cent. ; the price has declined (1895 price) 62 per cent. The consumption has risen just 5 per cent. more than the decline of

price warranted—if the community was to continue to spend the same money per head in 1895 as in 1880. Tea, however has not increased so much as the price has declined. The consumption is 48 per cent. greater than in 1880, but the 1895 price is 35 per cent. lower than the 1880 price. To preserve the same expenditure of income on this article the consumption should have risen 54 per cent., or 6 per cent. more than it has risen.

From this comparison of consumption and prices it is evident that there has been not only an increase of well-being due to the larger quantity of these commodities used, but an increase of consumption power as well, and judging from the instances before us, an increase of consumption power of considerable extent. We can carry the investigation a little further, to find out, so far as figures can tell us, how far the well-being of the community has increased. The most obvious method of estimating this increase is by constructing an index number for consumption. Into the problem whether a permanent index number of consumption is possible, it is not necessary to enter; the following attempt is intended only as a method of illustration, not as an indication of cause. It is the more important to state this limitation, as the year 1880 was, as the table shews, a year of very low consumption—a fact which was not apparent to the writer till this calculation, the last made for this paper, was made. So long as the result is not used by politicians for partisan purposes, and is regarded merely as a summary of the earlier table, it does not matter much which year is taken.

The method of construction was to take the seven articles—tea, coffee, sugar, dried fruits, spirits, beer and tobacco—as typical of the consumption power of the community, and to take the quantity consumed per head in 1880 in each case as equal to 100 —the sum 700 being taken as the index number of the consumption of that year. The articles are, of course, not all equally important, and therefore it must be repeated that the index number is intended for purposes of illustration only :—

INDEX NUMBER OF CONSUMPTION IN CANADA.

| YEAR. | Tea. | Coffee. | Sugar. | Dried Fruits. | Spirits. | Tobacco. | Beer. | T'l Index Number. |
|---|---|---|---|---|---|---|---|---|
| 1880 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 700 |
| 1881 | 140 | 117 | 119 | 159 | 129 | 106 | 101 | 871 |
| 1882 | 159 | 177 | 115 | 178 | 142 | 113 | 122 | 1006 |
| 1883 | 148 | 150 | 130 | 210 | 153 | 120 | 128 | 1039 |
| 1884 | 140 | 132 | 146 | 273 | 141 | 131 | 129 | 1092 |
| 1885 | 148 | 235 | 163 | 215 | 159 | 137 | 117 | 1174 |
| 1886 | 181 | 212 | 146 | 189 | 100 | 107 | 126 | 1071 |
| 1887 | 140 | 102 | 163 | 221 | 105 | 108 | 136 | 975 |
| 1888 | 137 | 150 | 163 | 236 | 90 | 110 | 144 | 1030 |
| 1889 | 133 | 165 | 180 | 242 | 109 | 113 | 144 | 1086 |
| 1890 | 140 | 165 | 134 | 247 | 124 | 112 | 149 | 1071 |
| 1891 | 137 | 172 | 153 | 252 | 104 | 120 | 168 | 1106 |
| 1892 | 162 | 182 | 261 | 247 | 98 | 120 | 156 | 1226 |
| 1893 | 133 | 192 | 192 | 231 | 104 | 124 | 154 | 1130 |
| 1894 | 151 | 175 | 234 | 278 | 104 | 118 | 162 | 1222 |
| 1895 | 148 | 180 | 268 | 273 | 94 | 113 | 154 | 1231 |
| 1896 | 167 | 175 | 180 | 294 | 87 | 111 | 155 | 1169 |

The year 1880 is evidently not an average year, and there were probably trade influences at work inducing a small importation. And it is to be remarked that the figures on which these index numbers are originally based are figures of trade and not of consumption. In order to attain something like strict accuracy by eliminating the effects of anticipatory importations to avoid a threatened tax, and such like influences visible in all trade returns, it would be necessary to make the consumption for each year the average of a period of three or four years—thus the figures for 1886 would be the average of 1884, 1885 and 1886; the figures for 1887 the average of 1885, 1886, 1887. But such exactitude would be tedious, and the process might be liable to the objection that it sought to attain a greater degree of accuracy than the nature of the subject admits.

Within the limits set down this index number illustrates the steady growth of the national prosperity and well-being—a movement not uniform or without backward steps—but none the less indicating that the command the nation has over the material sources of satisfaction has increased.