

Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

UNITED STATES DEPARTMENT OF AGRICULTURE



BULLETIN No. 695



Contribution from the Bureau of Crop Estimates.
LEON M. ESTABROOK, Chief.

Washington, D. C.

October 16, 1918

POTATOES: ACREAGE, PRODUCTION, FOREIGN TRADE, SUPPLY, AND CONSUMPTION.

By GEORGE K. HOLMES, *Division of Crop Records.*

CONTENTS.

	Page.		Page.
Sources, scope, and limitations.....	1	Domestic exports—Continued.....	
Food habits.....	3	Percentage of production.....	11
Acreage.....	4	Percentage of consumption.....	11
Production.....	5	Foreign trade surplus.....	12
Per acre.....	6	Per capita.....	12
Per capita.....	7	Percentage of production.....	12
Average value per acre.....	8	Percentage of consumption.....	13
Percentage of the supply.....	8	Consumption.....	13
Imports.....	8	Per capita.....	14
Percentage of production.....	9	Percentage of production.....	16
Percentage of the supply.....	9	Percentage of the supply.....	16
Supply.....	10	Summary for 1905-1914.....	17
Per capita.....	10	Historical tables.....	18
Domestic exports.....	10		
Per capita.....	11		

SOURCES, SCOPE, AND LIMITATIONS.

Intelligent use of the statistical matter contained in this bulletin depends on observing these explanations concerning its sources, scope, and limitations:

AREA.—Of production: Contiguous United States. Of foreign trade: Contiguous United States and, beginning with their inclusion in national trade, Alaska, Hawaii, and Porto Rico. Commodities received by contiguous United States from Alaska, beginning July 1, 1902, ceased to be included in technical "imports" and became "shipments" from the Alaska customs district, and so with Hawaii for 1901 and Porto Rico for 1900. Similarly, "domestic exports" from contiguous United States to these Possessions became "shipments" in the years mentioned. There was a change from external

NOTE.—This bulletin contains information which is of interest to the public at large as well as to those who are specially interested in potato production, trade, and consumption.

to internal trade in the accounting. The shipments of potatoes between these possessions and contiguous United States if any, are too small to affect the results appreciably as applicable to contiguous United States, and hence are not added to imports or domestic exports, as the case may be, beginning with the years mentioned, to determine the full movement into and from contiguous United States. The Philippine Islands have always been treated as a foreign country in the foreign trade statistics of the United States.

YEAR.—Of production: Year of planting, growth, and harvest. Of foreign trade: Fiscal year beginning July 1. Hence, the year of production is approximately related to the year of foreign trade, of supply, and of consumption.

POPULATION.—Confined to contiguous United States, June 1 estimates for noncensus years before 1910, and also for 1910 and later years, the census date for 1910 being April 15 instead of June 1 for many preceding censuses; supplied by Bureau of the Census.

ACREAGE.—Bureau of the Census: 1889 and later decennial census production years. For 1869 and 1879, census production divided by production per acre estimated by Bureau of Crop Estimates. Bureau of Crop Estimates: Estimates for noncensus years; for 1890–98 and 1900–8, new estimates of acreage made in 1917.

PRODUCTION.—Bureau of the Census: 1849 and later decennial census production years to 1879. Bureau of Crop Estimates: Estimates for noncensus years; for census years 1889 and later, census acreage multiplied by yield per acre.

PRODUCTION PER ACRE.—Bureau of Crop Estimates: Estimates by States weighted to compute United States average.

FARM PRICE PER BUSHEL.—Estimates by States by Bureau of Crop Estimates multiplied into State production, and total United States value divided by total United States production, for all years, including decennial census production years. For date of December 1.

TOTAL FARM VALUE OF PRODUCTION.—Farm price per bushel, estimated by States by Bureau of Crop Estimates; multiplied into State production; total value of all States for all years, including decennial census production years.

IMPORTS.—Gross imports to year beginning July 1, 1910; imports for consumption for later years; Bureau of Foreign and Domestic Commerce. Years begin July 1.

SUPPLY.—From the formula of production plus gross imports to the year beginning in 1910, and plus imports for consumption for 1911 and later years. Carry-over does not enter into the problem for the reason that potatoes are not a carry-over crop.

DOMESTIC EXPORTS.—Goods produced or manufactured in this country from either domestic or imported raw materials; Bureau of Foreign and Domestic Commerce. Years begin July 1.

VALUES OF FOREIGN TRADE.—The values of imported articles subject to ad valorem duties are defined by the Act of Congress of June 10, 1890, as—

The actual market value or wholesale price of such merchandise as bought and sold in usual wholesale quantities at the time of exportation to the United States in the principal markets of the country from whence imported, and in the condition in which such merchandise is there bought for exportation to the United States or consigned to the United States for sale, including the value of all cartons, cases, crates, boxes, sacks, and coverings of any kind, and all other costs, charges, and expenses incident to placing the merchandise in condition ready for shipment to the United States.

The value of all other imports, whether subject to specific duty or free of duty, is determined also according to the law just quoted. The customs duty, if any, is not reckoned as a part of the import value. The value of domestic exports is their declared value at the time of exportation in the ports of the United States whence they are exported, which the law requires to be stated under oath, with penalty for misstatement. Tare included.

GOLD.—All values and prices have been reduced to gold for 1861–1878.

POTENTIAL CONSUMPTION.—From the formula of production plus gross imports to the year beginning in 1910, and plus imports for consumption for 1911 and later years, minus domestic exports. The result stands closely for actual consumption in each year. No account is taken of stocks at beginning and end of year; potatoes are not a carry-over crop. The computed consumption includes potatoes used for seed, for live-stock feeding, and for starch manufacture, as well as for human food and the quantity lost in waste.

AVERAGES OF 10-YEAR PERIODS.—If the average is derived from one column, the years represented are added and the total is divided by the number of years represented. A difference between two columns is for the years represented in both columns.

If an average of averages or of percentages is computed, the years that are represented in both of the two base columns are added and one total is divided by the other, as indicated; except that production per acre and per capita production per acre are unweighted means.

Every average for less than 10 years is preceded by a* and that is preceded by a figure indicating the number of years represented.

FOOD HABITS.

So great have been the variety and abundance of foods in this country and the dominance of sectional food habits that potatoes have never reached a prominence in the national dietary that they occupy in some other countries. Among the different groups of States the dietary importance of this tuber varies enormously. In much of the South it is greatly subordinate to sweet potatoes, yams,

rice, hominy, and corn bread and similar preparations of corn meal, while, at the other extreme, in many States of the North, it is customarily served at breakfast and dinner and perhaps infrequently at the third meal of the day.

The potato is subordinate to food habits, and these are largely formed in childhood. Great increase or diminution in its consumption as food is influenced by low or high price, by abundance or scarcity, and by the relative standing of substitute foods. The potato eaters of this country are accustomed to a full potato consumption according to their desires, and this is not large, as a per capita average for the whole country, when comparison is made with prominent potato-consuming countries. Under normal conditions, there are usually so many other things to eat in generous supply that the practical upper limit of potato consumption is easily reached. On the other hand, in a year of short supply and high price of potatoes, substitutes are accepted, but reluctantly so. Following the underproduction of potatoes in 1916, a retail price of 75 cents to \$1 a peck caused many a family to substitute rice, corn meal, and hominy.

ACREAGE.

The acreage of the potato crop in this country, as reported by the decennial censuses, is for farms and does not include the numerous gardens that produce potatoes off farms. The actual acreage from year to year is the result of the individual opinions of the farmers who produce potatoes with regard to the prospective total demand and price during the coming year, and in practice there is likely to be less miscalculation concerning acreage than there is concerning the various causes of high or low production per acre. Potentially the usual potato acreage of this country could be increased enormously.

The acreage of the potato crop was first determined by estimate by the Bureau of Crop Estimates for 1866 to be somewhat over 1,000,000 acres; in 1869 the census production was divided by the average production per acre estimated by this bureau and the computed acreage was 1,309,000 acres; similarly in 1879 the computed acreage was 1,713,000 acres. The first acreage determined by census enumeration was for 1889, and was found to be 2,601,000 acres, and the number of acres increased to 3,669,000 in the census year 1909, followed by small increase in later years, except that 4,390,000 acres were harvested in 1917, and that in 1916 the estimate of the acreage of this crop was 3,565,000 acres, or considerably below the acreage of the preceding seven years.

During the nine years, 1866-1874, the average potato acreage was 1,243,000 acres, and the acreage increased during each subsequent 10-year period until the average for 1905-1914 reached 3,541,000 acres, an increase of nearly 200 per cent in 40 years.

PRODUCTION.

QUANTITY.

The first census report of potato production was 65,798,000 bushels raised in 1849; by 1859 the crop had become 111,100,000 bushels. The yield was 201,200,000 bushels in 1889, and 394,553,000 bushels in 1909, a production that was subsequently exceeded only by the estimated production of 420,647,000 bushels in 1912, 409,921,000 bushels in 1914, and 442,536,000 bushels in 1917.

Since 1899 the years of low potato production were 1901 with 198,626,000 bushels, 1911 with 292,737,000 bushels, and 1916 with 286,953,000 bushels. The average yearly production of the 10 years, 1905-1914, was 343,394,000 bushels.

BY GEOGRAPHIC DIVISIONS.

The geographic distribution of the potato crop among the different sections of the country in each census year and in 1912 and 1916, years of high and low production, has undergone interesting changes. If the crop of each geographic division is represented by a percentage of the total crop of the United States for each year, it appears that the New England crop declined relatively from 19.2 per cent of the national production in 1859 to 6.2 per cent in 1889; this latter percentage was nearly doubled in 1916, and there are indications that New England is tending toward a larger fraction of the national production.

On the other hand, the Middle Atlantic States have declined from 38.1 per cent of the national production in 1859 to 18.1 per cent in 1916. From 1869 to 1912 the East North Central States maintained approximately the same relative position in potato production, or about 28 to 35 per cent of the entire production, but the West North Central States increased their relative production from 7 per cent in 1859 to 26.6 per cent in 1889, followed by decline on the whole to 17.9 per cent in 1916.

Marked relative increase of potato production is found in the South Atlantic States, where the percentage remained nearly constant at about 4 until 1899, after which it increased strongly to 11 per cent in 1916. Tendency to increase is found also in the East South Central States from 1899 to 1916, although the fraction is comparatively small, ranging from 1.8 per cent in 1899 to 3.4 per cent in 1916, or for the latter year about the same percentage as for 1859. In the West South Central States also the percentage is small, but it has increased from 0.9 per cent in 1859 to 2.5 per cent in 1916.

West of the Great Plains relative potato production has conspicuously increased. In the Mountain region relative production has been from almost nothing in 1859 to 8.9 per cent in 1916, and in the

Pacific States the increase during the same period has been from 2 to 10.1 per cent.

In 1916 the South produced 16.9 per cent of the national crop of potatoes, the Mountain and Pacific States 19 per cent, New England and the Middle Atlantic States 30.2 per cent, and the North Central States 33.9 per cent.

As has been otherwise stated, the South produced about one-sixth of the national crop of potatoes in 1916, and this crop was very largely of early potatoes. Two characteristic crops of potatoes are produced in this country, the early and late crops, and the southern crop, largely of early potatoes, is mostly for consumption in the North at a time when the late crop of the preceding year has been nearly all consumed and the oncoming new crop of early potatoes sells for comparatively high prices.

PER ACRE.

The Bureau of Crop Estimates first determined, by estimate, the average yield per acre of the potato crop of this country beginning with 1866. From that year to the latest year the high averages are 113.4 bushels per acre in 1912, 111.1 bushels in 1904, 110.5 bushels in 1875 and 1914, 109.5 bushels in 1869, 107.5 bushels in 1909, 102.2 bushels in 1906, and 100.8 bushels in 1917. On the other hand, the years of low average production per acre are 1881 with 53.5 bushels, 1890 with 56.7 bushels, 1887 with 56.9 bushels, 1892 with 62.1 bushels, 1894 with 63.6 bushels, 1901 with 66.3 bushels, 1897 with 67.9 bushels, and 1878 with 69.9 bushels. The yield per acre in 1916 was 80.5 bushels, a low average for recent years which combined with an acreage below the usual to produce a deficient crop.

During the 9-year period 1866-1874 the average yearly yield of potatoes per acre was 91 bushels, and the average markedly declined to 71.3 bushels in the 10-year period 1885-1894. Perceptible recovery was made in the following 10-year period, and much larger recovery, rising to a new high-water mark, was reached in the 10-year period 1905-1914 with its average yield of 97 bushels per acre. In 20 years the productivity of the average potato acre has increased 36 per cent. This increase is due to various causes and among these are greater specialization of production, more intensive treatment, and higher fertility of the soil.

Notwithstanding great improvement in recent years, the average yield of potatoes per acre in the United States is low in comparison with the averages of prominent potato-producing countries in Europe. For the 10 years 1900-1909 the average production of Germany is 200 bushels per acre; of the United Kingdom, 193.8 bushels; of Austria, 151.1 bushels; of France, 133.8 bushels; of Hungary, 118.7 bushels; and of European Russia, 99.9 bushels; while during the same period the United States averaged 91.4 bushels.

PER CAPITA.

For the crop year beginning in 1849 the per capita production of potatoes was 2.9 bushels, for 1859 it was 3.6 bushels, for the 10-year period 1885-1894 the yearly average was 2.9 bushels, or lower than that of any other period. The average was 3.45 bushels in the following 10-year period, and increased in the next 10-year period, 1905-1914, to 3.8 bushels per capita.

While total potato production per capita has increased since the 10-year period 1885-1894, the production per acre compared with population has slightly declined during the same time. Per 1,000,000 of population the production of potatoes per acre was 1.07 bushels in 1905-1914, and 1.15 bushels in 1895-1904 and 1885-1894. In former years the yield of potatoes per acre per 1,000,000 of the population was much higher and amounted to 1.72 bushels in 1875-1884, and 2.34 bushels in 1866-1874. Increase of productivity per capita per acre did not keep pace with increase of population from 1866-1874 to 1905-1914. The gain of production per capita in recent years has been more because of increased total acreage than because of increased production per acre.

VALUE OF CROP.

PRICE PER BUSHEL.

The record of the average price per bushel received by farmers for potatoes extends back to 1866, when the estimate for the United States was first made by this bureau. Great variations are found in the average annual prices since that time, and by far the highest price was reached for the crop of 1916, \$1.46 per bushel. A price as high as 97 cents per bushel was reached for the crop of 1917, 91 cents for 1881, 80 cents for 1911, and 76 cents for 1901. On the contrary, prices have gone as low as 26 cents per bushel for 1895, 29 cents for 1896, 34 cents for 1875, and 35 cents for 1889.

Among the 10-year periods the highest average price per bushel of potatoes at the farm is for the period 1905-1914, when it was 59.1 cents per bushel. Proceeding backward in time, the price was lower in each preceding 10-year period until the price of 49.6 cents per bushel is found in 1875-1884. During the 9 years preceding that period the average was 56.6 cents per bushel, or a little under the average of the latest 10-year period.

TOTAL VALUE OF CROP.

The first estimate of the value of the farmers' potato crop was \$50,723,000 for 1866. The total steadily increased to \$99,291,000 for 1881, followed by a period of depression in total value with sudden recovery to \$113,291,000 for 1890, the highest amount to that year. The next year to register high-water mark was 1901, the total

value for which was \$151,602,000; by 1908 the total had reached \$210,618,000, and the total for 1915 was \$221,992,000; 1916 witnessed an enormous increase in total value, for which year the estimate is \$419,333,000, and this amount was much exceeded by \$543,865,000 in 1917.

A strong tendency to increase from one 10-year period to the next is in evidence. The average total value of the farm potato crop for 1866-1874 was \$63,799,000; for 1895-1904 it was \$117,012,000; and during the following 10 years the average greatly increased to \$202,855,000.

AVERAGE VALUE PER ACRE.

Upon relating the total value of the potato crop to the total acreage and computing the average value per acre, it appears that from the period 1866-1874 to 1885-1894 the average declined from \$51.34 to \$35.98. Then followed the somewhat higher average of \$39.03 per acre for 1895-1904 and the remarkable increase of 1905-1914 resulting in an average of \$57.28 per acre.

PERCENTAGE OF SUPPLY.

Production may now be viewed in relation to the national supply of potatoes, the understanding of the word "supply" being the entire quantity of potatoes produced in this country and received from other countries as imports. This supply is diminished by the exports of the domestic crop, but if there were no domestic exports the supply would be equal to the consumption. So small relatively are the imports of potatoes that the production has been from 98.4 to 99.8 per cent of the supply in 10-year periods; and these percentages approximately represent the range for value, that is, the percentage that the value of the crop is of the value of the supply.

IMPORTS.

QUANTITY RECEIVED.

Potatoes do not occupy a place of perceptible importance in the import trade of this country, except in a small degree in years when the production is deficient. As before stated, the production of potatoes in the United States is usually approximately the consumption, but let the production fall perceptibly below the customary consumption and imports begin to arrive from countries whose export trade is attracted by the higher prices of this country. So it has happened, for instance in the fiscal year beginning July 1, 1876, a year of low production, that the imports of potatoes, which had previously been relatively very small, suddenly amounted to 3,206,000 bushels; again in 1881, another year of low production, the imports reached 8,790,000 bushels; the next year of low production, 1887, was a year of imports amounting to 8,260,000 bushels; again in the similar year 1901 the imports were 7,656,000 bushels; and in 1908

they were 8,384,000 bushels. The largest amount of imported potatoes ever received by this country in one year was in 1911, when the quantity reached 13,729,000 bushels, and that was a year of large deficiency.

The annual averages presented by periods of years do not reach half a million bushels before the period 1875-1884, when the average yearly imports were 2,158,000 bushels. In the next 10-year period the average was 3,018,000 bushels, followed by 1,401,000 bushels in 1895-1904, and by 2,946,000 bushels in 1905-1914.

In a year of large imports the bulk of them is consigned from the United Kingdom, but in other years, when the import movement is relatively small, the larger fractions of the imports are usually from Canada and Bermuda, with Germany perhaps third in order, and Mexico and the Netherlands following.

VALUE OF IMPORTS.

The average annual value of the imported potatoes was \$1,506,000 in the period 1905-1914, and this average was not previously equaled in any 10-year period. Previous to 1875-1884 the average was much below \$1,000,000.

The values of imports are the values of the goods in foreign countries and do not include the costs of transportation from the foreign point of shipment to this country, nor the import duty of this country, if any.

The computed average import value of imported potatoes per bushel reached as high a figure as 61 cents for 1865-1874, and declined to 44.7 cents per bushel for 1885-1894, after which there was an increase to 51.1 cents per bushel in 1905-1914.

PERCENTAGE OF PRODUCTION.

The imports of potatoes as a percentage of potato production in this country have never exceeded 1.65 per cent of the crop, as an annual average for any 10-year period, this average being for 1885-1894. The lowest period average, 0.22 per cent, is found for 1866-1874. For the 10 years, 1905-1914, the imports were 0.86 per cent of the production. The percentages for value do not differ materially from those for quantity of potato imports.

PERCENTAGE OF THE SUPPLY.

Potato production and supply being so nearly the same, the imports of potatoes are related to the supply quite the same as they are to the production. The imports of the 10-year period 1905-1914 were 0.85 per cent of the supply. The largest ratio for any period, 1.62 per cent, is for 1885-1894, and the smallest ratio, 0.22 per cent, is for 1866-1874. The corresponding percentages for value are not materially different.

SUPPLY.**QUANTITY OF POTATOES.**

As a total of potato production and imports, the supply of potatoes in this country increased, with various recessions, from 111,100,000 bushels in 1859 to 208,590,000 bushels in 1883, to 352,449,000 bushels in 1904, and to 420,982,000 bushels in 1912, the largest supply of potatoes ever in the possession of this country, except in 1917. The supply of 1913 was 335,171,000 bushels; of 1914, 410,191,000 bushels; and of 1915, 359,930,000 bushels.

As indicated by 10-year averages, the supply of potatoes has steadily increased until the average annual supply of the 10-year period 1905-1914, 346,340,000 bushels, was reached. This is a large increase over the average of the preceding 10 years, 262,625,000 bushels. The average for the 9 years, 1866-1874, was 113,055,000 bushels.

PER CAPITA.

The per capita supply of potatoes in this country was 2.92 bushels for 1849. For the 9 years, 1866-1874, the annual average was 2.89 bushels; during the next period, 1875-1884, the average was 3.27 bushels; and during the next two 10-year periods it was 2.99 and 3.47 bushels. The largest average for a period is 3.79 bushels per capita for 1905-1914.

VALUE OF THE SUPPLY.

The value of the potato supply in this country is first known for the year beginning in the year 1866, for which it was \$50,810,000. By 1890 the value had risen to \$116,089,000, and by 1908 it had risen to \$214,295,000. The largest value is for 1916. For 1914 it was \$199,734,000, for 1915, \$222,324,000, and for 1916, \$424,035,000.

DOMESTIC EXPORTS.**QUANTITY.**

The exports of domestic potatoes are not subject to the wide range found in the case of imports. These exports did not reach 1,000,000 bushels until 1904, nor 2,000,000 bushels until 1910. By reason of the European war, the exports of domestic potatoes amounted to 3,135,000 bushels in the fiscal year beginning in 1914, to 4,018,000 bushels in 1915, and 2,489,000 bushels in 1916.

Previous to the war, in recent years more than one-half of the exports of domestic potatoes have been shipped to Cuba, about one-seventh to one-fifth to Canada, about one-tenth to Panama, and 6 to 8 per cent to Mexico.

PER CAPITA EXPORTS.

As may be inferred from the total amount, the per capita exports of domestic potatoes are represented by exceedingly small ratios. These hardly equal 0.01 per cent in the 10-year periods previous to 1905-1914, but for this period the ratio is 0.017 per cent.

VALUE OF EXPORTS.

The exports of domestic potatoes did not reach the value of \$1,000,000 previous to 1906, nor the total of \$2,000,000 previous to 1914, for which year the amount is \$2,346,000. In the following year the value of exports of domestic potatoes reached the comparatively high amount of \$3,486,000 and in 1916 the high value of \$3,514,000 was reached.

From an export value of \$99,000 in 1849, the exports of domestic potatoes rose to a value of \$525,000 as an average for 1895-1904, and an average of \$1,298,000 for 1905-1914.

From 1850 to 1914 the period averages of the value of exports of domestic potatoes range from 70.6 cents to 80.7 cents per bushel; for 1849 the average was 63.8 cents per bushel.

PERCENTAGE OF PRODUCTION.

Exports of domestic potatoes as a percentage of production present an obscure appearance. During no year has the fraction been as great as 1 per cent of the production except for 1916, when it was 1.12 per cent. The average for the 10-year period 1905-1914 was 0.47 per cent, and this was the average for the period 1866-1874. During the intermediate periods the fractions range from 0.28 to 0.36 per cent of the production. The percentages that the values of the domestic exports are of the values of the production do not differ materially from those representing quantities.

PERCENTAGE OF THE SUPPLY.

The potato supply is so nearly the same as the production that the exports of domestic potatoes are represented by percentages of the supply that are very nearly the same as the percentages of production. For the 10-year period 1905-1914 the exports of domestic potatoes were 0.46 per cent of the supply, a larger percentage than for any period subsequent to 1866-1874.

PERCENTAGE OF CONSUMPTION.

Potato consumption as well as supply is nearly the same as production, and consequently the exports of domestic potatoes have about the same fraction of consumption as they do of production. In the period 1905-1914 the average fraction of the consumption represented by the domestic exports is 0.5 per cent, a figure that is not exceeded for any period.

FOREIGN TRADE SURPLUS.

QUANTITY.

Previous to 1895 the imports of potatoes more generally exceeded the exports of domestic potatoes than they were exceeded by them, but subsequent to the year mentioned the more frequent fact is an excess of domestic exports over imports of potatoes. These remarks apply in a consideration of the separate years, but in a consideration of periods of years the imports exceed the domestic exports for every group except 1866-1874. The reason why the character of the individual years in later time is contradicted by the character of the later groups of years is found in the comparatively large imports of a few years when the production was deficient. The more common fact since 1895 is that the United States is a surplus country in potato production, and yet this country never had a surplus of potatoes amounting to 1,000,000 bushels in any year previous to 1906. For that year the surplus was 1,354,000 bushels; for 1910 the surplus was 2,165,000 bushels; for 1914 it was 2,866,000 bushels, and for 1915 it was 3,809,000 bushels, the highest amount ever reached. On the other hand, the excess of imports has run as high as 12,492,000 bushels in 1911, and amounted to more than 7,000,000 bushels in each of the years 1901 and 1908.

The surplus of foreign trade movement of potatoes, whether surplus imports or surplus domestic exports, makes a small ratio to population, in no case amounting to as much as one-tenth of 1 bushel except in 1881, when the ratio of surplus imports was 0.163 of 1 bushel, and in 1887 and 1911, with the same ratio, 0.133 of 1 bushel. These were years of extraordinary potato imports on account of deficient production.

VALUE OF SURPLUS.

The value of the surplus imports of potatoes over the domestic exports, found in every group of years except 1865-1874, in no instance reaches an amount higher than \$950,000, the average for 1885-1894. The average value for 1895-1904 was \$160,000, and for 1905-1914 it was \$208,000.

PERCENTAGE OF PRODUCTION.

In no year does the quantity of the surplus exports of domestic potatoes over the imports amount to as much as 1 per cent of the production, except 1.06 per cent in 1915, and in no 10-year period is there a surplus of domestic exports except in 1866-1874, for which period the surplus is 0.24 per cent of the production.

The surplus imports of potatoes have run as high as 7.68 per cent of the production, this figure being for 1881; but usually the percentage has been below 1. For the 10-year groups of years the sur-

plus imports as a percentage of the production range from 0.25 per cent for 1895-1904 to 1.36 per cent for 1885-1894. The value of the surplus imports of potatoes bears about the same relationship to the value of the production as the quantity of the surplus imports does to the quantity of the production, whether the subject be considered by groups of 10 years or by years separately.

PERCENTAGE OF CONSUMPTION.

The surplus imports of potatoes have been as high as 7.13 per cent of the consumption, in 1881, and no other year has as high a percentage, but often the percentage is less than 1. All of the 10-year periods except 1866-1874 are represented by a surplus of imports of potatoes, with fractions of consumption in no case higher than 1.3 per cent for 1885-1894.

The surplus exports of domestic potatoes in years when this fact is found have always been less than 1 per cent of the consumption, except 1.07 in 1915.

CONSUMPTION.

QUANTITY.

In 1849 this country consumed 65,815,000 bushels of potatoes. Fifty years ago the yearly consumption of potatoes was about 100,000,000 bushels. During the 9 years 1866-1874 the yearly consumption averaged 112,522,000 bushels. The annual average increased to 261,889,000 bushels during the 10-year period 1895-1904, after which there was a great increase to 344,733,000 bushels during 1905-1914. In 1915 the consumption was 355,912,000 bushels, and in 1916, 287,533,000 bushels.

There is no carry over of potatoes from the old to the new consumption year. The last of the crop of the former year is disappearing as the early crop of the present year is coming to market. Consequently there is no carry over of potatoes from one consumption year to the next to modify the computed consumption. Since 1900 the lowest consumption of potatoes was 205,754,000 bushels in 1901, and the largest consumption was 418,953,000 bushels in 1912. This is the largest quantity of potatoes ever consumed in this country in one year, and by a large difference exceeds the higher consumptions of other recent years, except the consumption of 1914, which amounted to 407,055,000 bushels.

Potato consumption is almost entirely confined to potatoes produced in this country, as appears when attention is given to the quantities of foreign-produced potatoes. The consumption of foreign potatoes in 1849 was 173,000 bushels, and the quantity had risen to only 234,000 bushels as an average for 1865-1874. In the next 10 years the average yearly consumption of foreign potatoes was 2,158,000 bushels, and the quantity rose to 3,018,000 bushels in the

10 years 1885-1894. This is the highest average consumption of any 10-year period. In the next one the average consumption of foreign potatoes fell to 1,401,000 bushels, and in 1905-1914 the average rose to 2,946,000 bushels.

The foregoing averages, expressing consumption of foreign potatoes, are far from stating the fact understandingly, for the reason that now and then a year of deficient production comes in which there is relatively large importation, although in ordinary years the importations are too small to have any perceptible effect upon national consumption. Except in deficient years, there has been no year in recent times in which the imported potatoes have amounted to as much as 500,000 bushels, and the quantity has usually been much less than that.

In 1910, a year of adequate production, the imports of potatoes were 219,000 bushels, but in the following year when there was a short crop, the imports amounted to 13,729,000 bushels, the largest amount by far ever reached. In the following year the imports fell to 335,000 bushels, but again in 1913 there was some deficiency in production and imports rose to 3,646,000 bushels. In 1914 nominal imports of 370,000 bushels followed, in 1915, 209,000 bushels, and in 1916, 3,069,000 bushels.

FOREIGN POTATOES AS A PERCENTAGE OF TOTAL CONSUMPTION.

Since the home-grown crop usually constitutes nearly the entire consumption of potatoes in this country, it may be sufficient to confine attention to the fraction consumed representing the foreign potatoes, and omit references to the complementary percentages representing the home-grown potatoes. In 1849 0.26 per cent of the entire consumption of potatoes in this country was of foreign potatoes, and the fraction declined to 0.2 per cent in the average for 1866-1874. During the following 10 years the consumption of foreign potatoes increased to 1.3 per cent of the total consumption, and during the next 10 years, 1885-1894, the average was 1.6 per cent. Small though the percentages are, the average for the 10 years 1895-1904 declined to 0.5 per cent, followed by a slight increase to 0.9 per cent, the average for 1905-1914. In 1916 foreign potatoes were 1.1 per cent of the entire national consumption.

PER CAPITA CONSUMPTION.

A conspicuous increase in the per capita consumption of potatoes in this country in recent years is made to appear by computing averages for 10-year periods. The average per capita consumption in 1849 was 2.92 bushels, and the quantity slightly declined to 2.88 bushels during 1866-1874. During the following ten years the consumption increased to 3.25 bushels, after which there was a decline to 2.98 bushels in the subsequent 10-year period, followed by 3.46 bushels

in 1895-1904. Increase followed in 1905-1914, during which period the consumption of potatoes per capita was 3.77 bushels. In 1916 the per capita consumption was 2.82 bushels. These are low rates of consumption when comparison is made with various European countries in which the potato is a more prominent article of food.

In years of deficient production of potatoes the imports do not offset the deficiency; they do so only in a small degree, consequently the rates of per capita consumption are determined almost entirely by the per capita production. For this reason a per capita consumption as low as 2.28 bushels is found for 1881, 2.40 bushels for 1887, 2.44 bushels for 1874, and 2.48 bushels for 1890. On the other hand, the highest per capita consumption ever reached in this country, as far as is known, was 4.56 bushels in 1895. Averages next below this are 4.39 bushels in 1912, 4.35 bushels in 1909, and 4.13 bushels in 1914.

The foregoing numbers substantially represent the per capita consumption of domestic potatoes. There is, however, a relatively small consumption of foreign potatoes which amounted to 0.008 of 1 bushel in 1849, and increased to 0.048 of 1 bushel in 1885-1894. During the next 10 years the average consumption of foreign potatoes was 0.019 of 1 bushel, and during the 10 years 1905-1914 the average was 0.032 of 1 bushel. For 1916 the consumption was 0.03 of 1 bushel.

All persons in a family do not eat potatoes and therefore a computed consumption per family may be better understood than the average individual consumption. In 1849 the average family consumption was approximately 16.35 bushels yearly, and the quantity declined during the two 10-year periods 1885-1894 and 1895-1904 to 14.6 and 15.57 bushels per family. During the next 10 years, 1905-1914, the per family consumption attained the highest 10-year average, 16.965 bushels.

The per capita and per family average consumptions above given include potatoes used in this country for all purposes—not only for human food, but for seed, for feeding to live stock, for manufacturing potato starch, and other products, if any, and some degree of waste. In 1899, according to the census report on manufacturers, 3,952,358 bushels of potatoes were used for making potato starch; 3,489,542 bushels in 1904, 3,510,135 bushels in 1909, and 2,831,313 bushels in 1914. The quantities of potatoes so used during these three years were from about 1 to 1½ per cent of the production of potatoes.

The seed requirements of the potato crop in this country have been ascertained by this bureau to be 8.6 bushels per acre as an average for the United States, but with a range of from 7 to 12 bushels in different parts of the country. During the 10-year period 1905-1914 the average production of potatoes per acre was 97.0 bushels, and of this production 8.6 bushels were used for seed, or 8.9 per cent of the

crop. Therefore about 10 per cent of the potato crop is used annually for seed and starch making. There is no information concerning the quantity or fraction of the crop fed to live stock. As a matter of general information, however, the fraction is believed to be very small. It appears that if the computed per capita consumption of potatoes is diminished by about one-tenth, the remainder will indicate closely the per capita consumption of this crop for human food, livestock feed, and waste. After thus making the computation, the per capita consumption of potatoes for human food and animal feed, with unknown waste, was 3.39 bushels during the 10 years 1905-1914, or about $15\frac{1}{2}$ bushels per family. This average otherwise expressed is equivalent to about $1\frac{1}{2}$ pecks per family per week throughout the whole year, and for all the families in the United States. For no 10-year period previous to 1905-1914 has consumption of potatoes in this country per capita and per family been as large as the averages for this period.

PERCENTAGE OF PRODUCTION.

In the 10-year averages the consumption appears to be greater than the production and has been so in fact for the reason that in exceptional years, when production has been very deficient, imports have relatively largely increased for these deficient years. In a consideration of the subject year by year, however, it is certain that since 1894 the more general fact has been that the consumption has been below the production. The difference either way in a consideration by years is usually very small both absolutely and relatively.

During the period 1866-1874 the consumption of potatoes was 99.8 per cent of the production; in 1885-1894 the consumption was 101.4 per cent of the production; in the following 10-year period it was 100.3 per cent; and in 1905-1914 it was 100.4 per cent of the production. In a consideration of this subject by years the percentage is more generally a fraction under 99 per cent than it is above 100 per cent.

Since a portion of the potato crop is always exported, the consumption of home-grown potatoes must necessarily be under 100 per cent of the production. The percentage is almost invariably a fraction under 100, and in only one year since 1865 is it as much as a fraction below 99 per cent of the crop.

PERCENTAGE OF THE SUPPLY.

What has been said under the preceding head concerning the consumption of potatoes as a percentage of production applies without material qualification to the consumption of potatoes as a percentage of the supply. During all years the fraction is usually more than $99\frac{1}{2}$ per cent.

SUMMARY FOR 1905-1914.

The 10-year period 1905-1914 represents statistical conditions in regard to potatoes in this country free of war influences, except in so far as they affect 1914, and the effect of this abnormal year is quite lost in the 10-year average.

During this period 343,394,000 bushels of potatoes were harvested annually from 3,541,000 acres, with an average production of 97.0 bushels per acre, or more per acre than during any previous 10-year period.

The production was 3.76 bushels per capita, or more than in any previous 10-year period, although the production per acre per 1,000,000 population, 1.07 bushels, was less than in any previous 10-year period. Production per acre in relation to population steadily declined from one period to the next until 1905-1914.

During the latest 10-year period the average price of potatoes per bushel at the farm was 59.1 cents, or somewhat higher than at any previous period. This price computes the average total value of the potato crop at the farm at \$202,855,000 during this period, so that the average value of this crop per acre during the period was \$57.28, or considerably more than at any preceding period. The quantity of the production, still having this period in mind, is 99.1 per cent of the supply, and the value of the production is 99.3 per cent of the value of the supply.

The average imports of potatoes during this period were 2,946,000 bushels, with an import value of \$1,506,000, or 51.1 cents per bushel. These imports were 0.86 per cent of the quantity of the production and the value of these imports was 0.74 per cent of the value of the production. Upon making a similar comparison with the supply, it is found that these imports were 0.85 per cent of the quantity of the supply and 0.74 per cent of the value of the supply.

During this period the average annual supply of potatoes in this country has amounted to 346,340,000 bushels, or 3.79 bushels per capita, a ratio that considerably exceeds that of every preceding period. The average value of this supply amounts to \$204,361,000.

An average annual export of 1,608,000 bushels of domestic potatoes appears for the 10-year period under consideration, and these potatoes had an average export value of \$1,298,000, or 80.7 cents per bushel. The imports of potatoes have increased during the last 30 years, and on the other hand it is plain that the exports of domestic potatoes have considerably increased, although the total is still small. The per capita exports of domestic potatoes in the latest 10-year period are only 0.017 of 1 bushel per capita. The exports of domestic potatoes in this period were 0.47 per cent of the quantity of the production and 0.64 per cent of the value of the production. Corresponding percentages for the supply are nearly the same as

those for production. As a percentage of consumption, the exports of domestic potatoes during this period averaged 0.5 per cent.

During this 10-year period the imports of potatoes exceeded the exports of domestic potatoes on the average by 1,339,000 bushels, valued at \$208,000, but this preponderance of imports is due to the exceptionally large imports in 1908 and 1911, which were years of very deficient production. The more general fact during the last 20 years is one of surplus of exports of potatoes rather than of imports. The surplus imports of this period are 0.015 of 1 bushel per capita, 0.4 per cent of the quantity of the production, and 0.1 per cent of the value of the production. Related to the consumption of potatoes, the surplus imports of this period were 0.4 per cent.

Potato consumption during the period under review has amounted to 344,733,000 bushels yearly on the average, of which the potatoes of domestic production amounted to 341,786,000 bushels, and foreign potatoes to 2,946,000 bushels. The foreign average is largely determined by the comparatively high imports of 1908 and 1911, whereas the more common fact during the last 20 years is that the foreign potatoes consumed in this country yearly are less than 1,000,000 bushels. Of the entire consumption of potatoes during this period the foreign potatoes were 0.9 per cent and the domestic potatoes were 99.1 per cent.

The per capita consumption of potatoes for all purposes during this period was 3.77 bushels, of which the domestic potatoes were 3.74 bushels and the foreign potatoes 0.032 of 1 bushel. As previously explained, the total per capita consumption of potatoes should be reduced by about one-tenth on account of seed and the manufacture of starch, leaving a per capita consumption of 3.39 bushels yearly during this period for human food, animal feed, and waste.

During this period the consumption of domestic and foreign potatoes was on the average 100.4 per cent of the production, but, as before stated, this result is due to the unusually large imports of 1908 and 1911, the more general fact in recent years being that consumption is slightly less than production. The consumption of domestic potatoes during this period was 99.5 per cent of the production. Computed upon the total supply of potatoes, the total consumption during this period averaged 99.5 per cent.

HISTORICAL TABLES.

The four tables that are appended to the text of this bulletin were prepared and are published especially for their historical value. They constitute a statistical record concerning this principal vegetable crop which in its entirety and in many details has not heretofore been published, and afford a basis upon which to build similar information year by year.

TABLE 1.—*Acres, production, price, and value of potatoes in the United States, 1849-1917.*

Year, or period.	Harvested acreage.	Production.					Price and value at farm.			Production as a percentage of supply.	
		Total.	Per acre.	Per capita.		Average price per bush-el.	Total value.	Average value per acre.	Quantity.	Value.	
				Total.	Per acre per 1,000,000 population.						
	<i>Acres.</i>	<i>Bushels.</i>	<i>Bush.</i>	<i>Bush.</i>	<i>Bush.</i>	<i>Cts.</i>	<i>Dollars.</i>	<i>Dolls.</i>	<i>Per ct.</i>	<i>Per ct.</i>	
1849		65,797,896		2.91					99.7		
1859		111,099,867		3.63					100.0		
1866	1,069,381	107,200,976	100.2	3.00	2.78	47.3	50,722,553	47.43	99.8	99.8	
1867	1,192,195	97,783,000	82.0	2.68	2.28	65.9	64,462,486	54.07	99.8	99.8	
1868	1,131,552	106,090,000	93.8	2.86	2.54	59.3	62,918,660	55.60	99.9	99.9	
1869	1,309,018	143,337,473	109.5	3.79	2.88	42.9	61,491,776	46.98	99.9	99.9	
1870	1,325,119	114,775,000	86.6	2.98	2.22	65.0	74,621,019	56.31	99.6	99.6	
1871	1,220,912	120,461,700	98.7	3.03	2.47	53.9	64,905,189	53.16	99.9	99.9	
1872	1,331,331	113,516,000	85.3	2.78	2.08	53.5	60,692,129	45.59	99.7	99.7	
1873	1,295,139	106,089,000	81.9	2.52	1.95	65.2	69,153,709	53.39	99.5	99.5	
1874	1,310,041	105,981,000	80.9	2.45	1.88	61.5	65,223,314	49.79	99.8	99.7	
1875	1,510,041	166,877,000	110.5	3.76	2.51	34.4	57,357,515	37.98	99.9	99.8	
1876	1,741,983	124,827,000	71.7	2.74	1.56	61.9	77,319,541	44.39	97.5	97.9	
1877	1,792,287	170,092,000	94.9	3.64	2.02	43.7	74,272,500	41.44	99.7	99.7	
1878	1,776,800	124,126,650	69.9	2.59	1.46	58.7	72,923,575	41.04	97.9	98.2	
1879	1,713,433	169,458,539	98.9	3.46	2.02	43.6	73,883,923	43.12	99.6	99.6	
1880	1,842,510	167,659,570	91.0	3.34	1.82	48.3	81,062,214	44.00	98.7	98.9	
1881	2,041,670	109,145,494	53.5	2.12	1.05	91.0	99,291,341	48.63	92.5	95.5	
1882	2,171,636	170,972,508	78.7	3.24	1.48	55.7	95,304,844	43.89	98.6	98.8	
1883	2,289,275	208,164,425	90.9	3.86	1.68	42.2	87,848,991	38.37	99.8	99.8	
1884	2,220,980	190,642,000	85.8	3.44	1.56	39.6	75,524,290	34.00	99.7	99.7	
1885	2,265,823	175,029,000	77.2	3.10	1.35	44.7	78,153,403	34.49	99.9	99.2	
1886	2,287,136	168,051,000	73.5	2.91	1.27	46.7	78,441,940	34.30	99.2	99.3	
1887	2,357,322	134,103,000	56.9	2.27	.96	68.2	91,506,740	38.82	94.2	96.1	
1888	2,533,280	202,865,000	79.9	3.35	1.33	40.2	81,413,589	32.14	99.6	99.6	
1889	2,600,750	201,200,000	77.4	3.26	1.25	35.4	71,294,000	27.41	98.3	98.1	
1890	2,653,000	150,494,000	56.7	2.39	.90	75.3	113,291,000	42.70	96.5	97.6	
1891	2,732,000	256,122,000	93.7	3.99	1.46	35.6	91,229,000	33.39	99.9	99.8	
1892	2,650,000	164,516,000	62.1	2.51	.94	65.5	107,835,000	40.69	97.4	98.1	
1893	2,722,000	195,040,000	71.7	2.92	1.07	58.4	113,886,000	41.84	98.5	98.9	
1894	2,891,000	183,841,000	63.6	2.70	.94	52.9	97,330,000	33.67	95.3	99.4	
1895	3,101,000	317,114,000	102.3	4.56	1.48	26.2	83,151,000	26.81	99.9	99.8	
1896	2,974,000	271,678,000	91.4	3.84	1.29	29.0	78,757,000	26.48	99.9	99.8	
1897	2,813,000	191,025,000	67.9	2.65	.94	54.8	103,442,000	36.77	99.4	99.5	
1898	2,841,000	218,772,000	77.0	2.98	1.05	41.5	90,897,000	31.99	99.8	99.7	
1899	2,938,778	259,027,000	88.6	3.47	1.18	39.6	102,510,000	34.88	99.9	99.9	
1900	2,987,000	247,759,000	82.9	3.26	1.09	42.3	104,764,000	35.07	99.9	99.9	
1901	2,996,000	198,626,000	66.3	2.56	.85	76.3	151,602,000	50.60	96.3	98.0	
1902	3,078,000	293,918,000	95.5	3.71	1.21	46.9	137,730,000	44.75	99.9	99.8	
1903	3,080,000	262,053,000	85.1	3.24	1.05	60.9	159,620,000	51.82	98.8	98.8	
1904	3,172,000	352,268,000	111.1	4.27	1.35	44.8	157,646,000	49.70	99.9	99.9	
1905	3,195,000	278,885,000	87.3	3.32	1.04	61.1	170,340,000	53.31	99.3	99.5	
1906	3,244,000	331,685,000	102.2	3.87	1.19	50.6	167,795,000	51.72	99.9	99.9	
1907	3,375,000	322,954,000	95.7	3.70	1.10	61.3	197,863,000	58.63	99.9	99.9	
1908	3,503,000	302,000,000	86.2	3.40	.97	69.7	210,618,000	60.13	97.3	98.3	
1909	3,668,855	394,553,000	107.5	4.36	1.18	54.2	213,679,000	58.24	99.9	99.9	
1910	3,720,000	349,032,000	93.8	3.79	1.02	55.7	194,566,000	52.30	99.9	99.9	
1911	3,619,000	292,737,000	80.9	3.12	.86	79.9	233,778,000	64.60	95.5	97.0	
1912	3,711,000	420,647,000	113.4	4.41	1.19	50.5	212,550,000	57.28	99.9	99.9	
1913	3,668,000	331,525,000	90.4	3.42	.93	68.7	227,903,000	62.13	98.9	99.2	
1914	3,711,000	409,921,000	110.5	4.16	1.12	48.7	199,460,000	53.75	99.9	99.9	
1915	3,734,000	359,721,000	96.3	3.59	.96	61.7	221,992,000	59.45	99.9	99.8	
1916	3,565,000	286,953,000	80.5	2.82	.79	146.1	419,333,000	117.62	98.9	98.9	
1917 (preliminary)	4,390,000	442,536,000	100.8	4.28	.97	122.9	543,865,000	123.89			
1849		65,797,896		2.91					99.7		
1859		111,099,867		3.63							
1866-1874	1,242,743	112,803,794	91.0	2.89	2.34	56.6	63,798,982	51.34	99.8	99.8	
1875-1884	1,910,062	160,196,519	84.6	3.22	1.72	49.6	79,478,873	41.61	98.7	98.7	
1885-1894	2,569,231	183,076,000	71.3	2.94	1.15	50.5	92,438,067	35.98	98.4	98.6	
1895-1904	2,998,078	261,224,000	87.1	3.45	1.15	44.8	117,011,900	39.03	99.5	99.4	
1905-1914	3,541,486	343,393,900	97.0	3.76	1.07	59.1	202,855,200	57.28	99.1	99.3	

TABLE 2.—Imports and supply of potatoes of the United States, 1849—1916.

Year, or period.	Imports, gross, or for consumption.						Supply.			
	Quantity.	Import value.		Percentage of production.		Percentage of supply.		Quantity.		Value.
		Total.	Per bushel.	Quantity.	Value.	Quantity.	Value.	Total.	Per capita.	
	<i>Bushels.</i>	<i>Dollars.</i>	<i>Cents.</i>	<i>Bush.</i>	<i>Dolls.</i>	<i>Bush.</i>	<i>Dolls.</i>	<i>Bushels.</i>	<i>Bush.</i>	<i>Dollars.</i>
1849.....	172,912	48,635	28.1	0.26	.....	.....	.....	.....	.....	.....
1850.....	299,132	94,441	31.6	.....	.....	.....	.....	.....	.....	.....
1851.....	322,223	119,388	37.1	.....	.....	.....	.....	.....	.....	.....
1852.....	353,082	92,870	26.3	.....	.....	.....	.....	.....	.....	.....
1853.....	306,187	118,747	38.8	.....	.....	.....	.....	.....	.....	.....
1854.....	.....	318,932	.....	.....	.....	.....	.....	.....	.....	.....
1855.....	535,320	270,798	50.6	.....	.....	.....	.....	.....	.....	.....
1856.....	693,611	442,476	63.8	.....	.....	.....	.....	.....	.....	.....
1857.....	.....	644,915	.....	.....	.....	.....	.....	.....	.....	.....
1858.....	.....	512,744	.....	.....	.....	.....	.....	.....	.....	.....
1859.....	.....	478,255	.....	.....	.....	.....	.....	111,099,867	3.63	.....
1860.....	753,511	289,227	38.4	.....	.....	.....	.....	.....	.....	.....
1861.....	837,223	342,709	40.9	.....	.....	.....	.....	.....	.....	.....
1862.....	327,315	174,207	53.2	.....	.....	.....	.....	.....	.....	.....
1863.....	4,497	4,487	99.8	.....	.....	.....	.....	.....	.....	.....
1864.....	10,955	12,155	111.0	.....	.....	.....	.....	.....	.....	.....
1865.....	78,194	46,804	59.9	.....	.....	.....	.....	.....	.....	.....
1866.....	198,265	87,795	44.3	.19	0.17	.18	0.17	107,399,241	3.01	50,810,348
1867.....	209,555	128,465	61.3	.22	.20	.21	.20	97,992,555	2.69	64,590,951
1868.....	138,470	76,327	55.1	.13	.12	.13	.12	106,228,470	2.86	62,994,987
1869.....	75,336	50,507	67.0	.05	.08	.05	.08	143,412,809	3.79	61,542,283
1870.....	458,758	234,303	51.1	.40	.31	.40	.31	115,233,758	2.99	74,855,522
1871.....	96,259	95,308	99.0	.08	.15	.08	.15	120,557,959	3.04	65,000,497
1872.....	346,840	209,294	60.3	.30	.34	.30	.34	113,862,840	2.79	60,901,423
1873.....	549,073	331,370	60.4	.52	.48	.51	.48	106,638,073	2.54	63,485,079
1874.....	188,757	166,981	88.5	.18	.26	.18	.26	106,169,757	2.46	65,390,295
1875.....	92,148	130,361	141.5	.05	.23	.06	.23	166,969,148	3.76	57,487,876
1876.....	3,205,555	1,652,963	51.6	2.57	2.14	2.50	2.09	128,032,555	2.81	78,972,504
1877.....	528,584	245,515	46.4	.31	.33	.31	.33	170,620,584	3.66	74,518,015
1878.....	2,624,149	1,345,744	51.3	2.11	1.85	2.07	1.81	126,750,799	2.65	74,269,319
1879.....	721,868	276,454	38.3	.43	.37	.42	.37	170,180,407	3.47	74,160,377
1880.....	2,170,372	874,223	40.3	1.29	1.08	1.28	1.07	169,829,942	3.39	81,936,437
1881.....	8,789,860	4,660,120	53.0	8.05	4.69	7.45	4.48	117,933,854	2.29	103,951,461
1882.....	2,362,362	1,092,211	46.2	1.38	1.15	1.36	1.13	173,334,370	3.29	96,397,055
1883.....	425,408	193,623	45.5	.21	.22	.20	.22	208,389,333	3.86	88,042,614
1884.....	658,633	255,590	38.8	.35	.34	.34	.34	191,300,633	3.46	75,779,880
1885.....	1,937,416	649,009	33.5	1.10	.83	1.09	.82	176,966,416	3.13	78,302,412
1886.....	1,432,490	543,091	37.9	.85	.69	.85	.69	163,483,490	2.93	78,985,031
1887.....	8,259,538	3,693,021	44.7	6.16	4.04	5.80	3.88	142,362,538	2.41	95,199,761
1888.....	883,380	321,106	36.3	.43	.39	.43	.39	203,248,380	3.37	81,734,695
1889.....	3,415,578	1,365,898	40.0	1.70	1.92	1.67	1.88	204,613,578	3.32	72,659,898
1890.....	5,401,912	2,797,927	51.8	3.59	2.47	3.47	2.41	155,895,912	2.48	116,088,927
1891.....	186,871	186,006	99.5	.07	.20	.07	.20	256,308,871	3.99	91,415,006
1892.....	4,317,021	2,066,589	47.9	2.62	1.92	2.56	1.88	168,833,021	2.58	109,901,589
1893.....	3,002,578	1,277,194	42.5	1.54	1.12	1.52	1.11	198,042,578	2.96	115,163,194
1894.....	1,341,533	603,554	45.0	.73	.62	.72	.62	185,182,533	2.72	97,933,554
1895.....	175,240	127,595	72.8	.06	.15	.06	.15	317,289,240	4.57	83,378,595
1896.....	246,178	145,584	59.1	.09	.18	.09	.18	271,924,178	3.84	78,902,584
1897.....	1,171,378	473,154	40.4	.61	.46	.61	.46	192,196,378	2.67	103,915,154
1898.....	530,420	294,391	55.5	.24	.32	.24	.32	219,302,420	2.99	91,191,391
1899.....	155,861	147,349	94.5	.06	.14	.06	.14	259,182,861	3.47	102,657,349
1900.....	371,911	224,759	60.4	.15	.21	.15	.21	248,130,911	3.27	104,988,759
1901.....	7,656,162	3,160,801	41.3	3.85	2.08	3.71	2.04	205,282,162	2.66	154,762,801
1902.....	358,505	238,445	66.5	.12	.17	.12	.17	294,276,505	3.71	137,968,505
1903.....	3,166,581	1,870,004	59.1	1.21	1.17	1.19	1.16	265,219,581	3.28	161,490,004
1904.....	181,199	168,094	92.8	.05	.11	.05	.11	352,449,199	4.27	157,814,094
1905.....	1,948,160	853,063	43.8	.70	.50	.69	.50	280,833,160	3.34	171,193,063
1906.....	176,917	192,635	108.9	.05	.11	.05	.11	331,861,917	3.87	167,987,635
1907.....	403,952	283,032	70.1	.12	.14	.12	.14	323,357,952	3.70	198,146,032
1908.....	8,383,966	3,677,034	43.9	2.77	1.75	2.70	1.72	310,383,966	3.49	214,295,034
1909.....	353,208	306,815	86.9	.09	.14	.09	.14	394,906,208	4.36	213,985,815
1910.....	218,984	235,847	107.7	.06	.12	.06	.12	349,250,984	3.79	194,801,847
1911.....	13,729,012	7,167,480	52.2	4.69	3.07	4.48	2.97	306,466,012	3.27	240,945,480
1912.....	334,760	302,584	90.4	.08	.14	.08	.14	420,981,760	4.41	212,852,584
1913.....	3,645,706	1,765,940	48.4	1.10	.77	1.09	.77	335,170,706	3.45	223,668,940
1914.....	269,725	274,242	101.7	.07	.14	.07	.14	410,190,725	4.16	199,734,242
1915.....	209,052	331,631	158.6	.06	.15	.06	.15	359,930,052	3.59	222,323,631
1916 (preliminary).....	3,069,014	4,702,408	153.2	1.07	1.12	1.06	1.11	290,022,014	2.85	424,035,408
1849.....	172,912	48,635	28.1	.26	.....	.....	.....	65,970,808	2.92	.....
1850-1854.....	4*320,156	148,876	4*33.2	.....	.....	.....	.....	.....	.....	.....
1855-1864.....	7*451,776	317,107	7*48.6	.....	.....	.....	.....	.....	.....	.....
1865-1874.....	233,951	142,715	61.0	9* .22	9* .24	9* .22	9* .24	9*113,055,051	9*2.80	9*63,952,354
1875-1884.....	2,157,894	1,072,680	49.7	1.35	1.35	1.33	1.33	162,354,413	3.27	80,551,533
1885-1894.....	3,017,832	1,350,340	44.7	1.65	1.46	1.62	1.44	186,083,932	2.99	93,788,407
1895-1904.....	1,401,344	685,018	48.9	.54	.59	.53	.58	262,625,344	3.47	117,697,018
1905-1914.....	2,946,439	1,505,867	51.1	.86	.74	.85	.74	346,340,339	3.79	204,361,067

TABLE 3.—Domestic exports and foreign trade surplus of potatoes of the United States, 1849-1916.

Year or period.	Domestic exports.						Surplus exports.					
	Quantity.		Export value.		Percentage of production.		Percentage of supply.		Percentage of production.		Quantity.	
	Total.	Per capita of population.	Dollars.	Per bushel.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Total.	Per capita.
1849	Bushels	Per cent.	Dollars	Cents	Per cent.	Per cent.	Per cent.	Per cent.	Dollars	Bushels	Per cent.	Per cent.
1850	155,595	0.007	99,333	63.8	0.24	0.24	0.24	0.24	50,698	1,000	0.03	1.03
1851	106,342	0.005	79,314	74.6					15,127	1,008		
1852	148,910	0.006	115,121	77.3					14,267	1,007		
1853	225,905	0.009	152,569	67.5					56,689	1,005		
1854	149,575	0.005	121,680	86.6					2,933	1,006		
1855	* 223,013	* 0.008	203,410	90.4					1,115,516	1,008		
1856	* 226,908	* 0.008	153,061	67.5					1,117,737	1,011		
1857	* 238,722	* 0.008	205,616	86.1					1,236,860	1,016		
1858	242,231	0.008	205,791	85.0					1,439,124	1,013		
1859	376,056	0.013	284,111	75.6					1,228,633	0.13	0.34	
1860	389,372	0.013	284,673	74.8	0.34				1,193,582	0.12		
1861	413,091	0.013	285,508	69.1					1,371,919	1.011		
1862	417,138	0.013	295,865	70.9					1,46,844	1.013		
1863	517,530	0.016	301,664	58.3					127,457	0.006		
1864	463,212	0.014	303,400	65.5					298,913	0.014		
1865	538,001	0.016	374,360	69.6					362,205	0.015		
1866	470,753	0.013	381,372	81.0					334,568	0.011		
1867	512,380	0.015	338,777	70.0	0.48				270,982	0.009	0.53	0.29
1868	378,605	0.011	345,529	91.3	0.39	0.54	0.53	0.71	217,064	0.005	0.17	0.34
1869	508,249	0.014	328,316	64.6	0.48	0.52	0.48	0.52	251,989	0.010	0.35	0.40
1870	596,968	0.015	334,540	56.0	0.42	0.54	0.42	0.54	284,033	0.014	0.36	0.46
1871	553,070	0.015	384,042	69.4	0.48	0.51	0.48	0.51	149,739	0.002	0.08	0.20
1872	621,537	0.016	431,707	69.5	0.52	0.67	0.52	0.66	336,399	0.013	0.44	0.44
1873	515,306	0.013	434,879	84.4	0.45	0.72	0.45	0.71	225,515	0.011	0.15	0.15
1874	497,413	0.012	420,832	84.6	0.47	0.61	0.47	0.61	89,462	0.004	0.37	0.37
1875	609,642	0.014	463,338	76.0	0.58	0.71	0.58	0.71	296,462	0.010	0.40	0.40
1876	704,379	0.016	378,791	53.8	0.42	0.66	0.42	0.66	248,430	0.014	0.37	0.37
1877	529,650	0.011	404,149	93.3	0.42	0.64	0.42	0.63	1,138,313	1.009	1.21	1.10
1878	744,699	0.016	528,383	71.0	0.44	0.71	0.44	0.71	282,868	0.005	0.13	0.13
1879	625,342	0.013	544,021	87.0	0.50	0.75	0.50	0.73	1,801,723	1.042	1.61	1.40

¹ Surplus imports.
² This quantity has been computed by converting shipment in barrels into shipments in bushels at rate of 2½ bushels to 1 barrel.

TABLE 3.—Domestic exports and foreign trade surplus of the United States, 1849-1916—Continued.

Year or period.	Domestic exports.						Surplus exports.							
	Quantity.		Export value.		Percentage of production.		Percentage of supply.		Per cent- age of consumption, quantity.		Quantity.		Percentage of production.	
	Total.	Per capita of population.	Total.	Per bushel.	Quant- ity.	Value.	Quant- ity.	Value.	Total.	Per capita.	Value.	Quant- ity.	Value.	Per cent.
1879.....	Bushels.		Dollars.	Cents.	Per cent.	Per cent.	Per cent.	Per cent.	Bushels.		Dollars.	Bushels.	Per cent.	
	696,080		522,039	75.0	.41	.70	.41	.41	1,25,788		245,585	1,001	1.02	
1880.....	638,840	.013	400,517	72.1	.38	.57	.38	.38	1,413,706	1.51	1,413,706	1.02	.31	
1881.....	408,286	.008	441,816	108.2	.37	.44	.35	.43	1,831,574	1.03	1,428,304	1.03	1.25	
1882.....	439,443	.008	428,478	97.5	.26	.45	.25	.44	1,033,733	1.06	1,033,733	1.12	.70	
1883.....	554,613	.010	374,588	67.5	.43	.27	.43	.27	1,922,019	1.06	1,800,905	.06	.21	
1884.....	380,868	.007	265,355	69.7	.20	.35	.20	.35	1,277,705	1.005	9,705	.01	.06	
1885.....	494,948	.008	346,864	70.1	.44	.28	.44	.28	1,442,468	1.026	1,802,145	1.28	.01	
1886.....	434,864	.008	318,259	73.2	.26	.41	.26	.40	1,997,026	1.017	1,224,832	1.59	1.82	
1887.....	403,880	.007	308,193	76.3	.30	.34	.28	.32	1,755,658	1.133	1,384,828	1.58	1.59	
1888.....	471,955	.008	316,224	67.0	.23	.39	.23	.39	1,411,425	1.007	1,411,882	1.20	1.20	
1889.....	406,618	.007	269,693	66.3	.20	.37	.20	.37	1,306,960	1.049	1,090,205	1.30	1.54	
1890.....	341,189	.006	316,482	92.8	.23	.22	.22	.22	1,500,723	1.080	1,481,445	1.36	1.21	
1891.....	357,022	.009	361,378	64.9	.40	.22	.40	.22	1,370,151	1.008	1,175,372	.14	.19	
1892.....	845,720	.013	700,032	82.8	.51	.65	.50	.64	1,371,301	1.033	1,366,557	12.11	1.32	
1893.....	803,111	.012	651,877	81.2	.41	.57	.41	.57	1,199,467	1.033	1,625,317	1.13	1.58	
1894.....	572,957	.009	418,221	73.0	.31	.43	.31	.43	1,768,576	1.011	1,185,333	1.42	1.20	
1895.....	680,049	.010	371,485	54.6	.21	.45	.21	.45	504,809	.007	243,890	.16	.33	
1896.....	926,640	.013	515,067	55.6	.34	.65	.34	.65	680,468	.010	369,483	.25	.25	
1897.....	605,187	.008	400,666	76.1	.31	.44	.32	.44	1,566,191	1.008	1,12,488	1.30	.20	
1898.....	579,833	.008	450,739	77.7	.27	.50	.26	.49	40,413	.001	156,348	.02	.02	
1899.....	809,472	.010	626,791	77.4	.31	.61	.31	.61	653,611	.009	479,442	.25	.25	
1900.....	741,438	.010	518,621	69.9	.30	.50	.30	.50	369,572	.005	293,862	.18	.32	
1901.....	582,484	.007	564,550	106.8	.27	.37	.26	.36	1,266,611	.006	1,266,611	13.80	1.80	
1902.....	843,075	.011	532,533	65.5	.29	.40	.29	.40	1,484,570	.006	314,088	.17	.23	
1903.....	484,042	.006	436,135	90.1	.19	.27	.18	.27	1,882,539	1.033	1,433,869	1.08	1.95	
1904.....	1,163,270	.014	750,210	64.5	.48	.48	.33	.48	1,947,834	1.011	1,009,070	1.36	.39	
1905.....	1,000,326	.012	743,993	74.4	.36	.44	.36	.44	1,353,544	.016	1,085,399	.44	.69	
1906.....	1,530,461	.018	1,278,034	83.5	.46	.76	.46	.76	1,947,834	1.011	1,009,070	1.36	.39	
1907.....	2,033,894	.023	1,077,612	53.0	.37	.54	.37	.54	1,769,942	.009	764,580	.27	.43	
1908.....	1,703,651	.009	1,115,701	65.5	.31	.25	.31	.25	1,769,942	.009	764,580	.27	.43	
1909.....	999,470	.011	739,277	76.0	.25	.33	.25	.33	1,769,942	.009	764,580	.27	.43	
1900.....					.25	.33	.25	.33	646,208	.007	452,462	.16	.21	

1910.....	2,382,887	.026	1,535,630	64.4	.08	.79	.68	.69	2,164,903	.023	1,290,783	.62	.67	.62
1911.....	1,237,276	.013	1,414,297	114.3	.42	.60	.40	.41	12,491,736	1.133	1,573,183	14.27	12.46	14.09
1912.....	2,028,261	.021	1,646,176	81.2	.48	.77	.48	.48	1,693,501	.018	1,343,592	1.40	.63	.40
1913.....	1,794,073	.019	1,463,514	81.6	.54	.64	.54	.54	1,851,633	.019	1,302,426	1.56	1.13	1.56
1914.....	3,135,474	.032	2,345,731	74.8	.76	1.18	.76	.77	2,865,749	.029	2,071,489	.70	1.04	.70
1915.....	4,017,760	.040	3,485,740	86.8	1.12	1.57	1.12	1.13	3,808,708	.038	3,154,109	1.06	1.42	1.07
1916 (preliminary).....	2,489,001	.024	3,514,379	141.2	.87	.84	.86	.87	1,580,043	1.006	1,188,029	1.20	1.28	1.20
1849.....	155,595	.007	99,333	63.8	.24	.....	.24	0.2	117,317	1.001	50,698	.....	.....	1.03
1850-1854.....	169,350	.006	134,420	79.4	.....	.....	.....	.....	481,164,722	1.007	14,456	.....	.....	.....
1855-1864.....	381,326	.012	269,405	70.6	1*.34	.....	.....	.....	981,491,600	7*1.002	147,732	.....	.....	.....
1865-1874.....	526,392	.014	388,326	73.8	9*.47	9*.61	9*.47	9*0.5	292,411	.008	235,611	9*.24	9*.36	9*0.3
1875-1884.....	572,191	.011	443,814	77.6	.36	.56	.35	.4	11,583,703	1.032	1,628,866	1.99	1.79	10.9
1885-1894.....	533,226	.009	400,722	75.2	.29	.43	.29	.43	2,484,606	1.040	1,949,618	1.136	1.03	1.13
1895-1904.....	736,154	.010	524,680	71.3	.28	.45	.28	.45	1,663,690	1.009	1,160,338	1.25	1.14	10.3
1905-1914.....	1,607,078	.017	1,207,996	80.7	.47	.64	.46	.64	1,338,761	1.015	1,207,871	1.39	1.10	10.4

¹ Surplus imports.

NOTE.—Every average for less than 10 years is preceded by a (*) and that is preceded by a figure indicating the number of years represented.

TABLE 4.—Consumption of potatoes in the United States, 1849–1916.

Year, or period.	Consumption.										
	Total.	Domestic.	Foreign.	Percentage of total.		Per capita.			Percentage of production.		Percentage of supply.
				Domestic.	Foreign.	Total.	Domestic.	Foreign.	Total consumption.	Domestic consumption.	
1849.....	65,815,213	65,642,301	172,912	99.7	0.26	2.92	2.91	0.008	100.0	99.8	99.8
1850.....			299,132					.013			
1851.....			322,223					.013			
1852.....			353,082					.014			
1853.....			306,187					.012			
1854.....											
1855.....			535,320					.020			
1856.....			693,611					.025			
1857.....											
1858.....											
1859.....		110,719,495					3.62			99.7	
1860.....			753,511					.024			
1861.....			837,223					.026			
1862.....			327,315					.010			
1863.....			4,497								
1864.....			10,955								
1865.....			78,194					.002			
1866.....	106,886,861	106,688,596	198,265	99.8	.19	2.99	2.99	.006	99.7	99.5	99.5
1867.....	97,613,930	97,404,395	209,555	99.8	.21	2.68	2.67	.006	99.8	99.6	99.6
1868.....	105,720,221	105,581,751	138,470	99.9	.13	2.85	2.84	.004	99.7	99.5	99.5
1869.....	142,815,841	142,740,505	75,336	99.9	.05	3.77	3.77	.002	99.6	99.6	99.6
1870.....	114,680,688	114,221,930	458,758	99.6	.40	2.97	2.96	.012	99.9	99.5	99.5
1871.....	119,936,422	119,840,163	96,259	99.9	.08	3.02	3.02	.003	99.6	99.5	99.5
1872.....	113,347,534	113,000,694	346,840	99.7	.31	2.77	2.76	.009	99.9	99.6	99.5
1873.....	106,140,660	105,591,587	549,073	99.5	.52	2.52	2.51	.013	100.0	99.5	99.5
1874.....	105,560,115	105,371,358	188,757	99.8	.18	2.44	2.44	.005	99.6	99.4	99.4
1875.....	166,264,769	166,172,621	92,148	99.9	.06	3.75	3.75	.002	99.6	99.6	99.6
1876.....	127,502,905	124,297,350	3,205,555	97.5	2.51	2.80	2.73	.070	102.1	99.6	99.6
1877.....	169,876,175	169,347,591	528,584	99.7	.31	3.64	3.63	.011	99.9	99.6	99.6
1878.....	126,125,457	123,501,308	2,624,149	97.9	2.08	2.64	2.58	.055	101.6	99.5	99.5
1879.....	169,484,327	168,762,459	721,868	99.6	.43	3.46	3.44	.015	100.0	99.6	99.6
1880.....	169,191,102	167,020,730	2,170,372	98.7	1.28	3.37	3.33	.043	100.9	99.6	99.6
1881.....	117,527,068	108,737,208	8,789,860	92.5	7.48	2.28	2.11	.171	107.7	99.6	99.7
1882.....	172,895,427	170,533,065	2,362,362	98.6	1.37	3.28	3.24	.045	101.1	99.8	99.7
1883.....	208,085,220	207,609,812	425,408	99.8	.20	3.85	3.85	.008	99.9	99.7	99.7
1884.....	190,919,765	190,261,132	658,633	99.7	.34	3.45	3.44	.012	100.2	99.8	99.8
1885.....	176,471,468	174,534,052	1,937,416	98.9	1.10	3.12	3.09	.034	100.8	99.7	99.7
1886.....	169,048,626	167,616,136	1,432,490	99.2	.85	2.92	2.90	.025	100.0	99.7	99.7
1887.....	141,958,658	133,699,120	8,259,538	94.2	5.82	2.40	2.26	.140	105.9	99.7	99.7
1888.....	202,776,425	201,893,045	883,380	99.6	.44	3.36	3.34	.015	100.2	99.8	99.8
1889.....	204,208,960	200,793,382	3,415,578	98.3	1.67	3.31	3.26	.055	101.5	99.8	99.8
1890.....	155,554,723	150,152,811	5,401,912	96.5	3.47	2.48	2.39	.086	103.4	99.8	99.8
1891.....	255,751,849	255,564,978	186,871	99.9	.09	3.98	3.98	.003	99.9	99.8	99.8
1892.....	167,987,301	163,670,280	4,317,021	97.4	2.57	2.57	2.50	.066	102.1	99.5	99.5
1893.....	197,239,467	190,501,889	3,002,578	98.5	1.52	2.96	2.91	.045	101.1	99.6	99.6
1894.....	184,609,576	183,268,043	1,341,533	99.3	.73	2.71	2.69	.020	100.4	99.7	99.7
1895.....	316,609,191	316,433,951	175,240	99.9	.06	4.56	4.55	.003	99.8	99.8	99.8
1896.....	270,997,532	270,751,354	246,178	99.9	.09	3.83	3.83	.003	99.7	99.7	99.7
1897.....	191,591,191	190,419,813	1,171,378	99.4	.61	2.66	2.64	.016	100.3	99.7	99.7
1898.....	218,722,587	218,192,167	530,420	99.8	.24	2.98	2.97	.007	100.0	99.7	99.7
1899.....	258,373,389	258,217,528	155,861	99.9	.06	3.46	3.46	.002	99.7	99.7	99.7
1900.....	247,389,428	247,017,517	371,911	99.8	.15	3.26	3.25	.005	99.9	99.7	99.7
1901.....	205,753,678	198,097,516	7,656,162	96.3	3.72	2.65	2.55	.099	103.6	99.7	99.7
1902.....	293,433,430	293,074,925	358,505	99.9	.12	3.70	3.70	.005	99.8	99.7	99.7
1903.....	264,735,539	261,568,958	3,166,581	98.8	1.20	3.27	3.24	.039	101.0	99.8	99.8
1904.....	351,285,929	351,104,730	181,199	99.95	.05	4.26	4.26	.002	99.7	99.7	99.7
1905.....	279,832,894	277,884,674	1,948,160	99.3	.70	3.33	3.30	.023	100.3	99.6	99.6
1906.....	330,331,436	330,154,539	176,917	99.9	.05	3.85	3.85	.002	99.6	99.5	99.5
1907.....	322,154,058	321,750,106	403,952	99.9	.13	3.69	3.68	.004	99.8	99.6	99.6
1908.....	309,620,315	301,236,349	8,383,966	97.3	2.71	3.48	3.39	.094	102.5	99.8	99.8
1909.....	393,906,732	393,553,524	353,208	99.9	.09	4.35	4.35	.004	99.8	99.7	99.7
1910.....	346,867,097	346,648,113	218,984	99.9	.06	3.76	3.76	.002	99.4	99.3	99.3
1911.....	305,228,736	291,499,724	13,729,012	95.5	4.50	3.25	3.11	.146	104.3	99.6	99.6
1912.....	418,953,499	418,618,739	334,760	99.9	.08	4.39	4.39	.003	99.6	99.5	99.5
1913.....	333,376,633	329,730,927	3,645,706	98.9	1.09	3.44	3.40	.038	100.6	99.5	99.5
1914.....	407,055,251	406,785,526	269,725	99.9	.07	4.13	4.12	.003	99.3	99.2	99.2
1915.....	355,912,292	355,703,240	209,052	99.9	.06	3.55	3.55	.002	98.9	99.9	99.9
1916(prelm).....	284,533,013	284,463,999	3,069,014	98.9	1.07	2.82	2.79	.030	100.2	99.1	99.1
1849.....	65,815,213	65,642,301	172,912	99.7	.3	2.92	2.91	.008	100.0	99.8	99.8
1850-1854.....			4*320,156					4* .013			
1855-1864.....		110,719,495	7*451,776				1*3.62	7* .014		1*99.7	
1865-1874.....	9*112,522,477	112,271,220	2,253,951	99.98	9* .2	9*2.88	9*2.88	9* .006	9*99.8	9*99.5	9*99.5
1875-1884.....	161,782,222	159,624,328	2,157,894	98.7	1.3	3.25	3.21	.043	101.0	99.6	99.6
1885-1894.....	185,560,705	182,542,874	3,017,832	98.4	1.6	2.98	2.93	.048	101.4	99.7	99.7
1895-1904.....	261,889,189	260,487,846	1,401,344	99.5	0.5	3.46	3.44	.019	100.3	99.7	99.7
1905-1914.....	344,732,661	341,786,222	2,946,439	99.1	0.9	3.77	3.74	.032	100.4	99.5	99.5

