

Came down the Saviour
Of sinful men ;
Now give him welcome
To earth again.
Noël ! Noël !
Sing with us all, our Lord is born !
Noël ! Noël !

III. CHRISTMAS MORNING.

Being what some might think almost any Christmas day in our own time.

KEEN blew the wind across the naked wold,
Glimmered the snow-fields white ;
Awearied with my longing, doubt, and pain,
I watched the silent night.

Ah me ! joy comes and goes, but grief re-
mains ;
My days small comfort bring.
But hark ! upon the frosty winter air
The Christmas chimings ring,

And like a guilty ghost at breath of dawn,
My coward moanings fly ;
Echoes again th' adoring song that woke
Beneath Judæa's sky.

And sweeter, clearer, louder, chime on chime,
Ring out, O happy bells !
For every peal, with jubilant refrain,
The wondrous tidings tells :—

The wondrous tidings, old yet ever new,
That hallow Christmas mirth,
For on the blessed day when Christ was born
Joy comes to all on earth.

O hearts so weary with the pain of life,
That fain your bleeding feet
Would seek the gates of death to stop and rest—
Lo ! rest and comfort sweet.

And ye who lift your happy brows to heaven
Joy-crowned this Christmas day,
Still brighter beams your earthly bliss, aglow
With that celestial ray.

O Star, that lit the dreary dark of sin !
O Babe, that bade us live !—
O God, who, moved by pity and by love,
The precious Babe didst give !—

O Love divine ! dear Babe ! Almighty God !
What praises can we sing ?
How shall our voices faint thy beauty tell,
Our Saviour, Brother, King !

The laughter of the happy children sounds ;
They know not what they say ;
They only feel they love us for the joy
We give them Christmas day.

And so, albeit we have no power to speak
The thoughts that in us move,
Dear Father, though we are so low, so weak,
We love Thee for thy love.

Louise Both-Hendriksen.

THE FOOD QUESTION IN AMERICA AND EUROPE ;

OR THE PUBLIC VICTUALING DEPARTMENT.



IN the year 1865 the average production of grain to each inhabitant of the United States, man, woman, and child, was thirty-two and one-half bushels, consisting of Indian corn, wheat, oats, barley, rye, and buckwheat.

In the year 1885 the average product was fifty-two and one-half bushels, an increase of more than sixty per cent.

The gain in the production of hay, of meat, of dairy products, of fruit and other articles of food cannot be accurately measured, but has doubtless been equal to the *per capita* increase of grain.

If objection be taken that the agricultural statistics of 1865 were incomplete, because taken so soon after the war, reference may be

made to the average of the decade 1865 to 1874 inclusive, in which years the crop of grain averaged $37\frac{8.5}{100}$ bushels per head, as against the average of $48\frac{1.6}{100}$ bushels per head in the years 1875 to 1885—a gain of over twenty-seven per cent. *per capita*. The gain is really greater than is indicated by this percentage, because the proportion of our population which was engaged in agriculture was less in the second period than it was in the first.

In 1861 the railway service between the East and the West had for the first time become a unit, by the completion of various sections of railway connecting the whole system at many points. The importance of this fact in its connection with the power of the North to concentrate its armed forces, and to supply them with food during the civil war, has yet to be treated. It was an important factor in

the power of the North to maintain the integrity of the nation.

It was not until 1869 that the first consolidation took place of a through line under one management, from Chicago to the seaboard. This was then accomplished by the late Cornelius Vanderbilt.

In 1865 the average charge for moving a ton of produce from Chicago to the seaboard, and for moving general merchandise from the East to the West, was at the rate of three cents and forty-five hundredths per ton per mile. In 1885 it was sixty-eight hundredths of a cent for the same service.

If we take certain typical quantities of flour, beef, pork, corn, dairy products, and of fleece wool, weighing thirteen tons, their value at the market prices for export in the city of New York in the year 1865 was \$1,124.33, either for export or for domestic consumption, and they remained substantially at this value during the years 1866, '67, and '68—the period of paper inflation. The cost of moving thirteen tons one thousand miles over the New York Central Railroad and its connections in 1865 was \$448.63, leaving to the producer or his agent in Chicago the net sum of \$675.70 in paper money, equal to \$475.76 in gold. The same quantities of the same articles were worth in the city of New York in June, 1885, \$575.98 in gold. The cost of moving them a thousand miles was \$88.40, leaving to the producer or his agent \$487.58 in gold. But in the interval the efficiency of the farmer, measured by the increase in the grain crop *per capita*, had increased by sixty per cent., so that he could have placed twenty tons in New York in 1885, as against thirteen tons in 1865, the value of which, after deducting the freight, was \$780.13. These figures may explain facts which are of common observation. The old mortgage debts have all been paid, and the rate of interest on capital in the West now differs little from that in the East on the same security.

Thus it appears that, notwithstanding a reduction of price by one-half, the increased efficiency of the railway service and the restoration of the gold standard of value have enabled the farmer of the West to grow rich on the low price of produce, where he would have inevitably become poor under the former system of paper money, high prices, and heavy railway charges.

If we apply the rates at the two periods to flour, as an example of the average food of the people, at ten barrels per ton of 2000 pounds,—which is within a fraction of the true quantity,—the cost of moving a barrel of flour 1000 miles in 1865 was \$3.45. In 1885 it was 68 cents. The average ration of wheat-

flour to each adult person in the United States is well ascertained to be one barrel each year. Our population is now computed at somewhat over 58,000,000, or, if we rate two children of ten years old or under as one adult, we number in our consuming power 50,000,000 adults, each requiring one barrel of wheat-flour a year, all of which is moved on the average at least 1000 miles from the producer to the consumer. Before railways were constructed, grain which was 150 miles distant from a waterway could not be moved that distance without an expenditure about equal to its value. If wheat had been subject in 1885 to the charge of 1865, the cost of moving 50,000,000 barrels of flour 1000 miles would have been \$172,500,000. At the actual charge of 1885 over the New York Central line, at the average traffic charge of the year on all merchandise, of 68 cents, the cost was \$34,000,000, a difference of \$138,500,000 on the flour only.

Bread, however, is a less important factor in the subsistence of the people of this meat-consuming country than it is in other countries. In the Eastern and Middle States recent investigations of the Bureau of Statistics of Labor—especially in Massachusetts—sustain the substantial accuracy of previous computations made by the writer from the accounts of factory boarding-houses as to the average standard daily ration, or cost and quantity of the daily supply of food materials of adults who are occupied in the actual work of every-day life as artisans, mechanics, factory operatives, or laborers. The average in the factory boarding-houses—the occupants being mostly adult women—comes to 24 cents a day. A fair average cost of food for men and women engaged in manufacturing and mechanical arts appears to be 25 cents a day, varying in some measure in respect to the proportions, as the dietary of men varies somewhat from that of women, workingmen consuming more animal food than the average of factory operatives, who are mostly women.

This daily ration consists of the following elements:

Meat (including poultry and fish, a half to one pound, according to kind and quantity) at an average cost of.....	10	cents
Milk (half pint to one pint), butter (1 to 1½ ounces), and a scrap of cheese....	5	“
Eggs (one every other day) at 12 cents a dozen.....	½	“
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Total cost of animal food.....	15½	cents
Bread (about ¾ of a pound).....	2½	“
Vegetables (green and dry).....	2-2½	“
Sugar and syrup.....	2	“
Tea and coffee.....	1	“
Fruit (green and dry).....	½	“
Salt, spices, ice, and sundries.....	1½-1	“
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Average cost of daily ration.....	25	cents

The proportions vary somewhat under different conditions, but they may be taken as a fair average standard ration for adult workmen and women.

In the West the prices of meat and grain are less; the prices of groceries somewhat higher; but, on the whole, the same quantity of food can be purchased at somewhat less cost. In the South the habits of the people—especially of the colored race—are very different. Dairy products are much less used, and with the negro corn-bread and bacon (hog and hominy) take the place of most other varieties of food. On the whole, however, the proportion of wheat-bread to the other elements of the daily ration may probably be established at the proportion of one-tenth of the whole ration. If we, then, save \$138,500,000 per year in the cost of transportation on our bread-bill only, do we save ten-fold on our whole food supply? Is our food, on the average, moved a thousand miles, either by railway or by waterway? No exact reply can be given to this question. We find, however, that the tonnage which was moved over all the railways of the United States in the year 1883 represented, on the average, a fraction over seven tons to each inhabitant, man, woman, or child, moved an average distance of 110 miles. In 1884 this quantity was slightly reduced *per capita*, but the distance was a little greater. The charge for this service in 1884 was \$8.75 per head of the whole population. In 1885 the quantity was a little more, the average rate per ton a little less, and the gross charge per person was \$8.88. The largest single item of this traffic—probably one-half—consisted of food for man or beast. When to this is added merchandise moved by waterways and by wagon, and when consideration is given to the fact that all these materials must be sorted, converted, reconverted, and finally distributed in small parcels by wagon or by hand, so that every adult person may be sure to have from three to five pounds of solid food and one to two pounds of liquids, together with the necessary modicum of fuel, clothing, and shelter, the mere mechanism of subsistence can be comprehended, and the relative importance of the victualing department may be fully realized.

The average cost of the food materials in the Eastern and Middle States has been given. The people of these sections are even more dependent on the mechanism of distribution than any others. Their proportion of the railway tonnage must be double, in respect to distance, that of the inhabitants of other sections; and yet such is the perfection of the railway service at the present day that one day's wages of a common mechanic—or one

holiday in a year devoted to work—in Massachusetts will pay the cost of moving a year's supply of bread and meat from the prairies of the West to the center of Eastern manufactures. This fact cannot be too often repeated.

In view of these data, if the gain compassed in twenty years in the cost of moving bread alone has been \$138,500,000 for one year, how much do we now save on all the necessities of life? No absolute reply will be attempted; but it may be remembered that by way of the railway, waterway, and steamship the whole world has been converted into a neighborhood. Within the lives of very many men now living, each little area of this country practically depended upon its own labor for its own food. To-day the wheat of Oregon and of California is carried around Cape Horn to England at a fraction of its value, while half the people of Great Britain derive their food from India, Australia, and America, or from fields which are from six to thirteen thousand miles away. A cube of coal which would pass through the rim of a quarter of a dollar will drive a ton of food and its proportion of the steamship two miles upon its way from the producer to the consumer. The great hotels of New York run special railway cars for carrying eggs from Michigan to New York, and yet we import hens' eggs in considerable quantity from Denmark and from Holland. If each adult in the United States consumes one egg every other day, at only twelve cents a dozen, which is the proportion of the factory operatives of New England, the value of our hens' eggs is \$91,250,000 per year, or twice the value of the product of silver bullion, 25 per cent. more than the value of our wool-clip, and greater than the value of the entire product of our iron furnaces, even if we increase the product of pig-iron this year to 5,000,000 tons at \$17 a ton, at the furnace, or \$85,000,000 in the aggregate; at which figures our iron industry would greatly prosper.

I may venture to give once more a table which shows statistically the food-bill of the people of this country, upon the assumption that each average adult ought to enjoy as good a supply of food as the adult factory operatives, mechanics, and artisans of New England and the Middle States:

	Per day.	Aggregate per year.
Meat, fish, and poultry	10 cts.	\$,825,000,000
Milk, butter, and cheese	5 "	912,500,000
Eggs (one every other day)	½ "	91,250,000
Animal food	15½ cts.	\$,828,750,000
Bread (¾ lb. per day)	2½ "	456,250,000
Vegetables	2½ "	456,250,000
Sugar and syrup	2 "	365,000,000
Tea and coffee	1 "	182,500,000

	Per day.	Aggregate per year.
<i>Amounts bro't forw'd</i>	23½ cts.....	\$4,288,750,000
Fruit (green and dry)	½ cts.....	91,250,000
Salt, spice, ice, and sundries.....	1 ".....	182,500,000
	25 cts.....	\$4,562,500,000
Deduct probable excess on sugar, tea, coffee, and dairy products.....		262,500,000
		\$4,300,000,000
Add spirits and fermented liquors at the average between the estimates of Mr. D. A. Wells and the advocates of prohibition, about.....		700,000,000
Probable price of food and drink constituting the victualing department for one year at the present time.....		\$5,000,000,000

These figures are, as to each separate item, greatly in excess of ordinary computations, very few persons ever daring to estimate the entire dairy product of the country at over two-thirds the sum which is given in this table. In explanation of this discrepancy, I may state that few persons comprehend the great cost of distributing food in small parcels at retail. Perhaps the most difficult problem in the victualing department is to reduce this element of the cost of food. For instance, in the foregoing dietary the estimate for bread is three-quarters of a pound per day, at a cost of two and a half cents, which would be at the rate of three and one-third cents per pound of bread, a quantity corresponding to the ration of one barrel of flour per year to each adult, each barrel yielding two hundred and eighty pounds of bread. Now, there is only one place within my knowledge where good bread can be purchased at so low a price as three and one-third cents per pound: that is in the shops of the Howe National Bakery in New York. In Boston I find the average price of bread which is sold in the bakers' and grocers' shops to be more than five cents per pound, at which price the larger portion of the population of this city is served. At five cents per pound the bread-bill of the people of the United States would come to \$700,000,000, in place of \$456,250,000. It therefore follows that if the food-bill of the people is not in quantity what this standard calls for, the reason is that the average dietary is not up to this standard, even after making the admitted deduction for the excess of tea, coffee, sugar, and dairy products which is consumed in the East, as compared to other parts of the country.

In order that some idea may be gained as to the accuracy of the proportions which are given in this dietary, I have been enabled, by the courtesy of Mr. McHugh, Chief of the Bureau of Labor Statistics in Ohio, to give the average cost of the daily rations of the inmates

of the insane asylums and of the reformatory institutions of Ohio. It is as follows:

Meat (including fish and poultry).....	cents	6.40
Milk, butter, and cheese.....	"	3.30
Eggs.....	"	.30
Animal food.....	"	10.00
Sugar, syrup, salt, spice, and other groceries (including beans and lard).....	"	2.50
Bread.....	"	2.10
Vegetables and fruit (green and dry).....	"	2.00
Tea and coffee.....	"	.60
Total per day.....	"	17.20
Number of persons subsisted for one year..		6256

Many other comparisons might be made from the excellent reports of other bureaus; but this will suffice to establish the proportions of the victualing department.

It is admitted that the ration of sugar, tea, coffee, and dairy products in the previous table is too high; but if, after making deductions for these elements of subsistence, the price of whisky and beer be added at the average between the lowest computation of the skilled economist, Mr. David A. Wells, say about \$500,000,000, and the estimate of prohibition advocates, \$900,000,000, there can be no question that the total cost of food of the people of the United States is \$5,000,000,000; and at this estimate it doubtless represents one-half the price of life measured in money to at least ninety per cent. of the population who do the actual physical work of the whole community.

It is a well-established fact that, with respect to the more thrifty and prosperous classes of mechanics, artisans, and other so-called working classes, as well as in regard to the larger proportion of salaried classes, one-half the cost of living is the price of materials for food. As we go down in the grade of work to the level of the common laborer, who can earn but from 80 cents to \$1.25 per day, the proportionate cost of food materials rises to 60 and even 70 per cent. of the income of the family.

Thus it appears that, notwithstanding the improvement in the mechanism of distribution, and in spite of the enormous increase in the *per capita* product of grain and other food, great numbers of persons, even in this country, can barely obtain their daily bread, while want exists in the midst of plenty. Why is this? Is it not because we waste enough in ignorant buying and in bad cooking to sustain another nation as numerous, and because no common attention has yet been given to what may be called the Art of Nutrition? The writer only ventures to refer to this art in anticipation of a series of articles upon the

Science of Food, which are to be given in future numbers of THE CENTURY by Professor W. O. Atwater, to which this article may serve as an introduction.

It is important to determine the causes of these false conditions in the United States. More difficult yet are the problems in such countries as Ireland and Egypt, each name representing one of the most productive areas of the earth's surface, capable of sustaining a greater population than exists in almost any other country in proportion to area, and yet both stricken with poverty, almost with famine. Why are fertile districts of northern Italy devastated by the *pellagra*, a loathsome disease which is induced by insufficient nutrition? Why has the Government of Germany undertaken to instruct the people in the art of nutrition, lest the sordid condition of great districts should end in socialism, nihilism, and violent revolution? What is the most important department in the political questions of Europe to-day? Is it not the Victualing Department?

It must be remembered that, in the nature of things, there must be a substantial equality in the daily supply of food, so far as weight and the elements of nutrition are concerned. If the masses of the people are to be well nourished, each adult person must have the due proportion of protein or nitrogenous material, of fats, and of carbohydrates or starchy materials, because if either one is deficient vital force cannot be sustained. Neither can there be any true mental vigor or spiritual life when the body is not well nourished. "*Non est animus cui non est corpus.*" So far as any disparity can be admitted, the workingman or common laborer requires more than any one else. His food is his fuel, and his physical exertion must be sustained by a sufficient supply with the same regularity and certainty that the boiler of the steam-engine must be fed with coal; and, in fact, it will appear in Professor Atwater's future treatment of this subject that, although the standard rations which have been established as necessary to sustain a workingman in full vigor by several leading authorities in Germany, France, and England vary somewhat in the relative proportions of protein, fats, and carbohydrates, yet when reduced to calories, or mechanical units, or equivalents of heat, they correspond almost exactly each to the other. He will also show that it has been found expedient for the employers of labor in certain brickyards of Massachusetts and Connecticut to serve their workmen with a supply of the best food which represents in its chemical proportions, as well as in its calories, twice the ration which is served to the soldier of the German army when upon a forced march, or when engaged in the most arduous struggle

of active service in war, in order to promote the largest production of brick per man at the lowest cost to the employer.

The actual production of the principal element of food in the United States, to wit, the grain crop, has been given. Attention has also been called to the perfection to which the mechanism of distribution has been brought.

A few words may now be given to the use of land—the source of nearly all our food. The arable portion of the United States is computed at more than one-half the total area of 3,000,000 square miles, omitting Alaska. Of this portion only 265,500 square miles are yet put to actual use in the production of grain, hay, roots, or other articles of food, omitting only that proportion of animal food which beasts derive from pastures. The several areas of arable, pasture, and mountain land are given below, and in the portion set off as pasture-land are given the areas which might suffice for a much larger production of beef, dairy products, mutton, and wool than we now enjoy, if known methods of agriculture were intelligently applied to these arts.

In the accompanying diagram the outer square indicates the total area of this country, omitting Alaska, substantially 3,000,000 square miles. This square has been subdivided into three parts. The upper half or section represents, in a rough-and-ready way, the arable land of the country. What is called arable land really constitutes a larger portion, but one-half at least may be called fairly good land.*

The lower half is divided into two sections. One of these sections fairly represents pasture or grazing land, too dry for agriculture without irrigation, but capable of sustaining great flocks and herds. The other portion is assigned to mountain and timber. But even this part has many fertile valleys, and much of it may be made use of for the production of food.

Within the lines of the upper half, certain proportions drawn on the same scale as the outer square, which represents the total area, will be observed. These smaller sections represent proportionately the actual cultivation, as it now is, in its ratio to the whole.

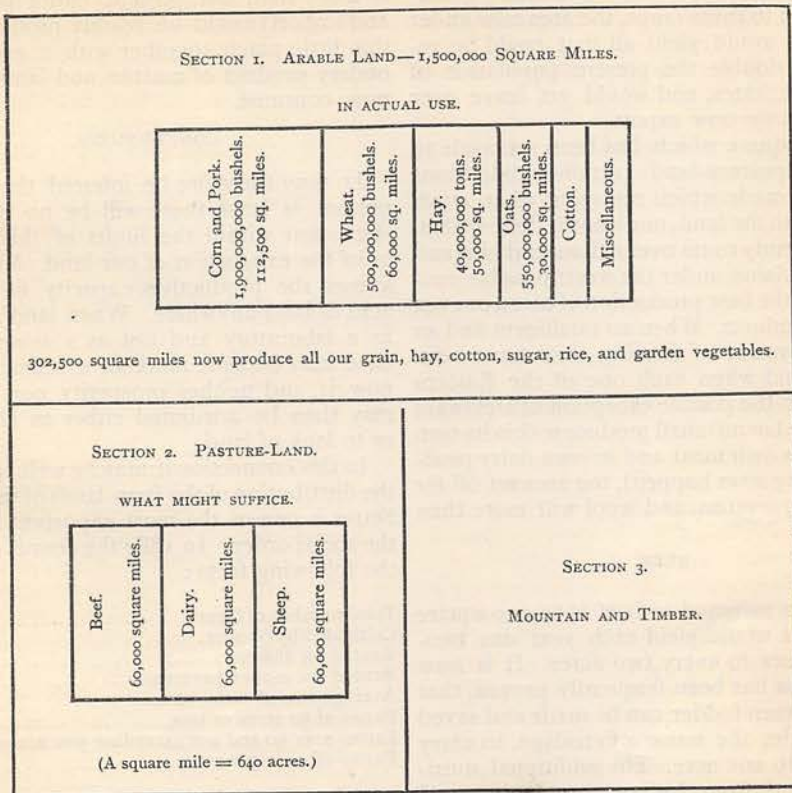
CORN AND PORK.

OUR average crop of Indian corn ranges from 1,800,000,000 to 2,000,000,000 bushels. At twenty-five to thirty bushels to the acre, the area of the corn-field is only 112,500 square miles, or less than four per cent. of the total area of the country. Our customary average

* The following analysis of the use of land has been previously submitted in "Bradstreet's" by the writer.

OUR NATIONAL DOMAIN.

WHAT WE HAVE DONE WITH IT, AND WHAT WE MIGHT DO WITH IT.



Compiled from the records of the Agricultural Department and other sources.

is less than thirty bushels, but on the best land fifty bushels are commonly produced, and sometimes one hundred. Corn may be reduced to pork at the ratio of about one bushel to ten pounds, including waste.

WHEAT.

ABOUT 60,000 square miles are all that are required or are now under cultivation in wheat. At only thirteen bushels to the acre, this little patch, constituting but two per cent. of our total area, would yield 500,000,000 bushels of wheat. This quantity, after setting aside enough for seed, would supply 80,000,000 people with their customary average of one barrel of flour per year.

HAY.

A HAY crop of 40,000,000 tons, at the average of a good season, one and a quarter tons per acre, calls for less than two per cent., or 50,000 square miles.

OATS.

THE oat crop of between 500,000,000 and 600,000,000 bushels, at thirty bushels to the acre, calls for one per cent., or 30,000 square miles.

COTTON.

WHILE the cotton crop has never reached 20,000 square miles, or two-thirds of one per cent. of the entire area of the country (less than two and a half per cent. of the area of the strictly cotton States), yet on this little patch, at the beggarly crop of one-half to three-fifths of a bale to the acre, 6,000,000 to 7,000,000 bales can be made each year.

MISCELLANEOUS.

LASTLY, all our miscellaneous crops of barley, hay, potatoes and other roots, of rice, sugar, tobacco, hemp, and garden vegetables, are raised on one per cent. of our area, or 30,000 square miles.

POSSIBILITIES.

It is perfectly safe to affirm that were a reasonably skillful mode of agriculture generally applied to these crops, the area now under cultivation would yield all that could be required by double the present population of the United States, and would yet leave over as much as we now export.

In the square which has been set aside to represent pasture-land certain subdivisions have been made which represent what *might* be done with the land, not what *is* done with it. Our cattle truly roam over a thousand hills and over wide plains, under the worst possible conditions for the best production of meat, or even of dairy products. When an intelligent and an intensive system of farming shall have been adopted, and when each one of the Eastern States (with the possible exception of Delaware and Rhode Island) shall produce within its own limits all its own meat and its own dairy products (as may soon happen), the area set off for beef, dairy, mutton, and wool will more than suffice.

BEEF.

THE area assigned to beef is 60,000 square miles. This would yield each year one two-year-old steer to every two acres. It is now admitted, as has been frequently proved, that sufficient green fodder can be made and saved in pits, under the name of ensilage, to carry two steers to one acre. The additional nutriment — meal from Indian corn, cottonseed meal, or hay — has been already provided for in the area set off for these crops. At the rate of one two-year-old steer taken off each two acres, each adult inhabitant of the United States, counting two children of ten years or under as one adult, could be served with very nearly one pound of dressed beef per day.

DAIRIES.

THE area set aside for dairy products is also 60,000 square miles. At the ratio of one cow to each two acres, fed on ensilage, cottonseed meal, and a modicum of hay, there would be a yield of fifty per cent. more milk, butter, and cheese than the people of the United States now enjoy; while the eggs, valued at the present time at not less than \$90,000,000 a year, and probably at \$120,000,000, could also be doubled in the same area.

MUTTON AND WOOL.

To a similar area of 60,000 square miles mutton and wool are assigned. Were sheep folded and fed as they are in England and in

some parts of this country, protected from cur dogs and properly nourished, wool to the amount of 500,000,000 pounds a year (which is more than our present entire production and import) could be readily produced from this little patch, together with a greater secondary product of mutton and lamb than we now consume.

CONCLUSIONS.

It may therefore be inferred that, for the present at least, there will be no danger of starvation within the limits of this country, or of the exhaustion of our land. No one yet knows the productive capacity of a single acre of land anywhere. When land is treated as a laboratory and not as a mine, subsistence may become more of a science than it now is, and neither prosperity nor adversity may then be attributed either to abundance or to lack of land.

In this connection it may be well to say that the distribution of the farm-lands of the United States is one of the most important factors in the social order. In 1880 the census disclosed the following facts:

Total number of farms.....	4,008,907
Cultivated by owners.....	2,984,306
Rented on shares.....	702,244
Rented for money payments.....	322,357
Average size of farm, acres.....	134
Farms of 50 acres or less.....	1,175,564
Farms over 50 and not exceeding 500 acres.....	2,728,973
Farms of over 500 acres.....	104,350

From these facts it may appear that if there is want in the midst of plenty in our own land, and if there is any difficulty in procuring daily food, it may not be attributed either to lack of land, want of capital, or scarcity of laborers. The modern miracle of the loaves is this: One man working the equivalent of three hundred days in the year, or three men working one hundred days in the harvest season on the far plains of Dakota in the production of wheat, aided by one man working three hundred days in milling and barreling the flour, and supplemented by two men working three hundred days in moving wheat and flour from Dakota to New York, and in keeping all the mechanism of the farm, the mill, and the railroad in good repair — four men's work for one year places one thousand barrels of flour at the mouth of the baker's oven in the city of New York — a yearly ration of bread for one thousand men and women.

What, then, is needed in order that all alike may have their necessary equal share of food — their three to five pounds per day of grain, meat, vegetables, and products of the dairy, and the like? Is it not a knowledge of the alphabet of food? Is not the missing factor

in our material welfare to-day the want of a common knowledge of what food to buy, and how to cook it? Half the mere price of life in money is the price of food. If we add to this the household labor in its proportion, the measure of the cost of food in terms of labor is far more than half the work of life. How many eight- and ten-hour men have fourteen-hour wives, whose work is toilsome and continuous, day in and day out, almost night and day, for the support of their families!

Although the food question is one of grave importance, even in this country, there can be with us no possible scarcity of food. Nearly one-fifth part of the products of agriculture (including cotton) is exported to feed and clothe the people of other lands. In return for these exports — the grain which we could not consume, and the cotton which we could not spin, and the oil which we could not burn, because there is enough and to spare besides what we export — we receive our great volume of imports, which has been divided into the following proportions by the measure of value in money, according to the average of recent years:

Articles of food and live animals.....	\$200,000,000
Articles in a crude condition, which are necessary in the processes of domestic industry.....	160,000,000
Articles fully or in part manufactured, which are used in the domestic arts or manufactures.....	75,000,000
Total.....	\$435,000,000
Manufactured goods ready for final consumption.....	\$130,000,000
Articles of voluntary use which may be classed as luxuries.....	65,000,000
	195,000,000
Total.....	\$630,000,000

The proportion of the product of agriculture exported varies year by year. If the declared value of exports be compared with the valuation of all crops at the farms, it ranges from twenty to twenty-five per cent. A fairer comparison is to extend the farm values to the final values at wholesale in the principal markets. The writer applied this method to the census figures of 1880 with the aid of other experts. The conclusion was that the wholesale value of all crops at the centers of wholesale distribution in the census year was a little less than \$4,000,000,000. Of this quantity somewhat

over \$700,000,000 worth was exported, or over seventeen per cent.; the proportion is now less.

In the production and movement of the crops to the centers of distribution 8,000,000 men were occupied, of whom seventeen per cent. or more, say 1,360,000, depended on a foreign market. In return we received imports classified as above, of which more than two-thirds consisted of articles of necessity or common comfort. It is in this way that the interdependence of nations asserts itself in spite of the obstructions of time, distance, and taxes, and that in all true commerce men and nations serve each other, both parties making a gain in every exchange of product for product.

The enormous export demand, especially of European countries, upon us for food, which is brought into notice by the fact of our large exports, brings into conspicuous observation the urgency of the demands of the victualing department, especially upon the continent of Europe; while the simple fact that several European states have obstructed the import of provisions from this country by heavy duties, or have absolutely prohibited the import of our pork upon the false pretense that it is especially unwholesome, bears witness also that, although the wages of labor in these countries are very low, yet the cost of the production of food, as measured by labor or in money, is very high. Where the product of agriculture is relatively small in proportion to the population and to the demand or purchasing power, it follows of necessity that the wages of labor must be very low, and the subsistence of the people inadequate. Only one or two examples can be given within the limits of this article.

I am permitted to give the following data, which have been furnished me by one of the most intelligent official observers in Germany, Consul J. S. Potter of Crefeld, Germany, in a report on the condition of German agriculture.* From this report I find that the income of a Prussian farm laborer, employed as a first hand upon a large farm, whose family consisted of himself, his wife, and five children, all under thirteen years old, averaged as follows in a recent year:

Wages of husband.....	\$142.80
Wages of wife in harvest time.....	11.90
Value of pork and potatoes raised and consumed.....	47.60
Value of goat's milk and vegetables sold....	26.18
Total income.....	\$228.48

* These reports and others of equal value have since been published among the consular reports issued by the State Department. Attention may well be called to these reports. At the request of the Secretary of State, the representatives of the great industries of the country prepared very careful forms of interrogatory

in respect to the several arts on which reports were desired, including agriculture. Responses to these questions thus prepared by experts are now being published, so that the reports of such consuls as have the capacity to report facts are becoming of great value to the student of social science.

EXPENSES.

Wheat-bread.....	\$ 7.14
Rye black bread.....	24.75
Pork and potatoes (valued as before).....	47.60
Cheese.....	4.95
Syrup.....	5.00
Coffee.....	3.71
Salt, pepper, and sundries.....	1.24
Total food for seven persons for one year	\$94.39

This makes a cost of three cents and seven-tenths per day per person. If the five children under thirteen be computed as two and one-half adults, making the family equal to four and one-half adults, the average per day is only five and three-quarter cents.

In my investigations of the food question I have found no statement of the food supply of a thrifty workingman and his family so meager as this, or at so low a cost *per capita*.

It may be interesting to give the other items of expenditure of this thrifty German peasant:

Clothing.....	\$39.97
Rent of house and three-quarters of an acre of land.....	35.75
Fuel and lights.....	14.24
Oil, soap, etc.....	3.71
Meal for goat and pig.....	16.66
Beer and tobacco.....	7.14
Sundries.....	14.28

Making a total expenditure for a family of seven persons..... \$226.14

In this same neighborhood, which is one of the most fertile parts of Prussia, the wages of other farm laborers who are supplied with food by their employers are as follows:

First laborer per year, \$71.50 with board.	
Second " " " 39.25 " "	
Third " " " 26.18 " "	

Average wages per year, \$44.25, or less than \$4 per month with board.

But when we turn to the production of a first-class Prussian farm and its cost, we find the product of a fraction less than ninety-one acres of land, which had been cultivated in a most skillful and intelligent manner, valued in all at \$3,942.47. Part of this product consisted of wheat, the cost of which is given at eighty-four cents per bushel of sixty pounds. Another portion consisted of rye, the cost of which is computed at sixty-eight cents per bushel of fifty-eight pounds.

It will be observed that although the wages of the farm laborer in this section average less than four dollars a month, with board added, the money cost of a bushel of wheat is set at eighty-four cents. In our great wheat-producing States and territories of the Far West wages are four- to five-fold, with board, and yet the cost

of a bushel of wheat in some places is not over one-half, or forty-two cents a bushel. It may be alleged that this is because we are converting the original fertility of a virgin soil into wheat, and thereby exhausting the land; but the rule holds true in only a little different proportion in the wheat-producing counties of New York and Pennsylvania, where fertilizers are as much required as in Germany. Wages in these sections are as high as those in the Far West, while the cost of wheat in money is not over two-thirds of that given as the cost in Germany at the farm.

It is interesting to consider the dietary of this prosperous Prussian farmer. The food is nearly one-half black bread made of rye. The proportion of meat is very small, as compared with the rations of this country. His family consisted of nine persons, three being children of over fourteen years of age. Their total living expenses for the year were \$736.28, divided as follows:

Food.....	\$300.41
Clothing.....	119.00
Fuel and light.....	23.89
Beer, wine, and spirits.....	71.40
Cigars, tobacco, and entertainments.....	47.60
Sundries.....	29.75
School expenses, and maintenance of son in army.....	144.23
Total.....	\$736.28

The cost of food per person each day is nine and a quarter cents.*

It is singular to compare the school expenses, the support of the son in the army, and the beer, wine, and spirits with the food bill. The food supply of this farmer, whose book accounts appear to have been kept with the accuracy of a merchant, and whose method of cultivation, as described, might serve as a lesson anywhere in scientific agriculture, is less in quantity and variety, and less in cost by at least one-third, as compared with the rations which are served in the prisons of Massachusetts.

The significant item in this expense account is the maintenance of the son in the army.

There are, of course, many other causes, aside from the military system of Europe, for the differences which are to be found in the subsistence of the people, which cannot be treated in the limits of this article. For instance, the relative area and population of European states, aside from Russia and Turkey, enter into the consideration. The area is about one-half that of the United States, while the population is little more than eight-

* For further comparisons of the food supply of working people in different countries, reference may be made to the first report of the National Bureau of the Statistics of Labor, by Hon. Carroll D. Wright.

fold, the ratio to the square mile being a little less than twenty in this country and one hundred and sixty in Europe.

This area is divided into fifteen empires, kingdoms, or states, omitting the petty states of eastern Europe, which are separated from each other by differences of race, creed, and language. Their commerce is obstructed among themselves by as many different systems of duties upon imports as there are states. The natural outlet for the crowded population of central Europe might be in southern Russia and in the fertile sections of Asiatic Turkey, were the relations of these several states to the eastern country the same as those of the Eastern States of this country to those of the West. There is land enough, and to spare; but the armies of Europe are sustained in order to prevent this very expansion of the people; and the misgovernment of the Turk, which renders Asia Minor almost a howling wilderness, is protected by the mutual jealousies of these very states, which are thus being destroyed by their own standing armies.

As war becomes more scientific, it becomes more costly. Victory rests not only on powder and iron, but yet more on bread and beef. It may have been the German sausage by which France was beaten, quite as much as the German rifle.

The food question in Europe may be one of possible revolution and repudiation of national debts, and of the disruption of nations as they now exist; and to this branch of the victualing department attention may well be called, because its conditions are so greatly in contrast to those of the United States; but this phase of the question will be treated separately in a subsequent article. May we not find in these costly armies, excessive debts, and excessive taxes not only the cause of pauper wages, but also the cause of the ineffectual and costly quality of so-called "pauper labor"? May there not also be found in these figures the incentives to socialism, to communism, and to anarchy? What hope for men and women, the whole of whose product would barely suffice for subsistence, when ten, twenty, and perhaps even thirty per cent. is diverted from their own use, and even food is denied them sufficient to maintain health and strength, in order that these great armies may be sustained?

The victualing department is therefore presented in these three phases:

First. In our own country the only question is how to save the waste of our abundance, and how to teach not only the working people, but even the prosperous, the right methods of obtaining a good and wholesome subsistence at less cost in money than they now spend for a poor and dyspeptic one.

Second. In Great Britain and Ireland the victualing department underlies a system of land tenure which is now on its trial, and which has led to such artificial conditions that great areas of good land have been thrown entirely out of cultivation, while half the people are being fed from fields from five thousand to fifteen thousand miles distant.

Third. Upon the continent of Europe the victualing department stands face to face with a forced method of distributing and wasting a food-product which, as a whole, is insufficient to maintain the whole population in vigor and health even if it were evenly distributed, as food must be equally distributed by weight if not by quality, in order that men and women may be equally well nourished.

When a famished democracy becomes conscious of its power, what will be the end of privileges which are not founded on rights, and of national debts which have been incurred by dynasties without the consent of the people who are now oppressed by them? How will standing armies be disbanded, which now seem to be as incapable of being sustained as they are impossible of being disarmed?

Such are some of the appalling questions to which we are led when we attempt to analyze the way in which men, women, and children now obtain the modicum of meat and bread which they must have every day in order to exist, and that daily ration of dairy products, of fruit, of sugar, and of spice which is needed for common comfort.

There is but one element of life which all have in common, and that is Time. Who can teach us how to use our time so as to obtain the substantially even weight of food which is necessary to the adequate nutrition and to the common welfare of rich and poor alike?

The writer can only put these questions, and report the facts and figures which he has given. Some of them may be already familiar to the readers of *THE CENTURY*; but their true significance he himself hardly comprehended until they had been grouped together under the title of "The Food Question."

Edward Atkinson.

