

THE IMPENDING DEFICIENCY OF BREAD-STUFFS.

ONLY the populations of European lineage inhabiting Asiatic Russia, the United States, Canada, Australasia, Argentina, Brazil, Uruguay, Chile, South Africa, and Europe and its colonies can be termed "bread-eaters," which, numbering 371,000,000 in 1871, now aggregate 510,000,000; the increase equalling 37.5 per cent.

Owing to the cessation of war among the nations of European blood, greater freedom from destructive epidemics, and improved sanitary conditions, the "bread-eaters" are increasing at a much greater rate than ever, and annual additions are nearly one-half greater than twenty-five years ago. Aside from the increase due to an accelerating rate, there is a progressive enhancement following from the geometrical growth emphasized by Malthus. While annual additions numbered some 4,300,000 in the earlier years of the eighth decade, they now number nearly 6,400,000, and each year adds about 100,000 to the annual increment. Such an increase of the consuming element necessitates progressively greater annual additions to the areas employed in growing the bread-making grains; and current additions, instead of being nil, as they have been during the last thirteen years, should be nearly one-half greater than in the early 'seventies.

From 1870 to 1880, the "bread-eating" populations increased by additions equalling 1.16 per cent per annum; while from 1880 to 1890 the annual rate of increase was 1.27 per cent. Censuses recently taken indicate a higher rate of increase since 1890.

Of the greater populations, those of the United States, Russia, Hungary, Germany, Great Britain and Ireland, Austria, Italy, and France increase at rates diminishing in the order named.

With one notable exception, the economic condition of the "bread-eating" populations has improved since 1870. In Hungary and Scandinavia the improvement has been phenomenal. The changes have been reflected in many ways, but in none more strikingly than in improvements in national dietaries. With the exception of Russia, and possibly Turkey, all Europe has shared, in greater or less degree, in the improvement in this direction. In the United Kingdom, for instance,

the dietary of the industrial classes has long been a comparatively high one; yet unit consumption of wheat has there been 4 per cent greater in the six years ending with 1895 than in the preceding six; while unit consumption of meats, fruits, and dairy products has increased in even greater measure. At the same time, unit consumption of potatoes and other low or cheap forms of food has diminished in a relative degree.

In France, annual unit consumption of wheat rose from 7.2 bushels per annum in the eighth decade, to 8.01 bushels for the five years ending with 1895; while unit consumption of rye fell from 1.54 to 1.45 bushels and that of maslin declined from 0.45 to 0.25 of a bushel. At the same time the unit supply of buckwheat was reduced from 0.7 of a bushel to 0.5 of a bushel; unit consumption of potatoes declining in much the same measure.

Want of space forbids the particularization of changes in all the countries of Europe, and it must suffice to direct attention to some of the more pronounced in the unit's ration of wheat; remarking that additions to the unit's wheat ration have been invariably accompanied by equivalent changes in the unit's consumption of cheaper forms of food.

Since 1871, Europe's population has increased by additions aggregating 91,000,000, or 30 per cent, while European rye-fields have shrunk 4,700,000 acres, or 4.5 per cent; those under spelt and maslin 1,300,000 acres, or 23 per cent, and those under buckwheat 6,500,000 acres, or 40 per cent. On the other hand, acres under potatoes show an increase of 5,800,000 acres, or 27 per cent, as against population's increase of 30 per cent. There has been a marked decrease of European unit consumption of potatoes, except in Russia, where there has been a great increase owing to the growing poverty of the mass of the population.

The most notable change of the last thirty years in the economic condition of a great population is probably that which has obtained in Hungary since it became autonomous. So great has been the improvement—much greater than in Austria—that unit consumption of wheat in Austria-Hungary has risen from 2.2 bushels per annum in the eighth decade to 4.1 bushels for the five years ending with 1895, or an increase of 86 per cent. Separately, Hungary shows an increase of 110 per cent. This explains a great decline in Austro-Hungarian exports of bread-stuffs, notwithstanding a great increase of wheat production.

All Scandinavia has been exceptionally prosperous, and shows great advances in the quality of food consumed; annual unit consumption of wheat having increased about 100 per cent within twenty-five years.

In Belgium, where unit consumption of wheat has long been high,

the increase, since the close of the eighth decade, has been 57 per cent; while unit consumption of the other bread-making grains has diminished in like measure. In Holland and Germany, similar changes have occurred, though less pronounced.

As regards Italy, available data show little change in unit consumption of the various primary food-staples, probably because economic conditions, as affecting the mass of the population, have improved but little in the last twenty-five years.

That there has been a great change in the proportions of the bread-making grains consumed in Europe, in recent decades, is obvious from the fact that while population has increased 30 per cent since 1870, the rye area of Europe has shrunk 4.5 per cent, with but trifling imports of rye from other countries. Relatively to population, Europe's rye area of 1871 was 42 per cent greater than that of 1896.

More than 85 per cent of Russia's great population finds employment upon the land; and since the emancipation of the serfs the lands of the village communes have been repeatedly subdivided among a rapidly increasing number of families. Subdivision has been carried so far, and with such undesirable results, that the Czar has recently forbidden it except by administrative permission, as holdings only large enough to support one family thirty years ago have, by partitions, become wholly inadequate; thus forcing the use of coarser forms of food, intensifying conditions of unthrift, and lowering the standard of living. Such changes in the economic condition of the mass of the population are reflected in pronounced dietary changes, affecting nearly a hundred million people; unit consumption of wheat having declined 14 per cent, and that of rye 13.5 per cent, since the close of the eighth decade. On the other hand, unit consumption of maize and potatoes has increased; the increase in the case of the latter being 13.5 per cent.

Governmental recognition of the lowering of the standard of living in Russia is evident in the official statement that prior to 1880 the consumption of bread had fallen 17 per cent below minimum requirements. Data relating to population, and production and exportation of the bread-making grains since 1880, indicate a further reduction of nearly 14 per cent in the unit bread-ration, which has now fallen 30 per cent below the minimum requisite for health and comfort.

In 1893, Prof. Karysheff cited, in the "Russkoe Bogatstvo," official data showing that the seed grain sown per unit had fallen 14 per cent since the middle of the seventh decade, notwithstanding an enormous

increase of exports; while the area under grains had ceased to expand. It was also shown that, to satisfy increasing demands on the part of the tax-collectors, the peasantry were being forced to part with progressively greater proportions of the grain grown.

Had not unit consumption of wheat declined in Russia since 1880, Russian exports of that grain during the last sixteen years would have been 250,000,000 bushels less; and had unit consumption of rye equalled that of the eighth decade, not only would the 750,000,000 bushels of rye exported since 1880 have been consumed at home, but domestic requirements would have absorbed 350,000,000 additional bushels of the wheat exported. That is to say, a reduction, since 1880, of 13.5 per cent in Russian unit consumption of bread has served to add 1,360,000,000 bushels to the importing countries' supply of the bread-making grains, has prevented scarcity in Central and Western Europe, and has been one of the most potent factors in causing world-wide agricultural depression, as well as that seeming abundance which has been the despair of the cultivator, inducing the optimist to believe that the world had entered upon an unending era of plethoric supplies of cheap food.

Only in Russia, and possibly Turkey, has unit consumption of wheat declined. In Roumania it has increased and that of maize diminished. And while official data are unsatisfactory in relation to soil production in Bulgaria, Servia, and Bosnia-Herzegovina, there is abundant evidence that since the Turk ceased to rule, economic conditions have improved in those countries; and this should have brought, and doubtless has brought, an improvement in the national dietaries.

Spanish and Portuguese data are as unsatisfactory as those relating to the Balkan states; but everything in the shape of evidence points to an increase of unit consumption of wheat and meats, and proportionate changes in that of the cheaper forms of food. Imports of wheat have certainly increased much more rapidly than population; while there has been little change in the relative areas employed in growing that grain.

Although the Swiss bread-grain areas could not have decreased much, being so small, the imports of wheat have increased much more rapidly than population; indicating an increase of unit consumption in consonance with the growing prosperity of Switzerland's population.

In relation to the consumption of the bread-making grains in Argentina, Brazil, Uruguay, and Chile, few satisfactory data are available; but the recent European emigration has doubtless increased the proportion of wheat and diminished that of maize in the dietaries

of Argentina and Uruguay; while Chilean wheat consumption has long been, relatively to population, but little below that of Belgium. In Brazil, emancipation and higher prices for coffee have stimulated the use of wheat and other high forms of food.

Australasian consumption of wheat per unit is the greatest known; and unit consumption of wheat is only less than that of France and Belgium, having steadily increased during the last twenty-five years.

While the belief is general that, since employment became less continuous for the mass of the industrial population, unit consumption of wheat in the United States has declined, yet the opposite is probably true, as bread has been the cheapest food obtainable. Since the close of the Civil War, there has certainly been a material increase of unit consumption south of the Potomac and Ohio; and there is no evidence in support of lessened consumption in the North. If we accept commercial additions to the official estimates of the last six wheat crops—as we doubtless should in part—unit consumption has certainly increased in recent years.

In relation to but a small part of the world's grain-bearing areas are reliable data available prior to 1870; and only recently has any attempt been made to assemble such as deal with production and consumption, since 1870, by the "bread-eating" world as a whole. Only the present writer seems to have made any attempt to measure the synchronous increase of population and the acres bearing the grains consumed by such populations. Investigations, pursued concurrently with the assembling of data relating to population, acreage, and production, show that unit consumption of wheat by the "bread-eating" world, as a whole, has increased steadily since 1870; while unit consumption of rye, spelt, maslin, and buckwheat (grains grown as exclusively for bread as is wheat) has as steadily declined, and in much the same measure as unit consumption of wheat increased.

Using official data for more than 95 per cent of the areas occupied by the "bread-eaters," and commercial estimates for the smaller fraction, it is found that the product of the areas so occupied—and which for convenience may be termed the "contributory areas"—plus imports from Asia and North Africa, has been such, in each of three periods indicated, as to afford annual average unit quotas of the "bread-making" grains as shown in table on page 178.

While unit consumption of wheat is shown to have steadily increased, that of other bread-making grains has as steadily declined, although that of rye shrank but little in the later period, owing to the

fact that seven out of the nine crops gave acre-yields greatly above the average; such yields resulting from a succession of exceptionally favorable seasons over all the greater producing districts.

ANNUAL UNIT SUPPLY, IN BUSHELS.

Periods.	Wheat.	Rye.	Spelt and Maslin.	Buckwheat.	Totals.
1871-78	3.552	2.683	0.181	0.376	6.792
1879-86	3.777	2.353	0.176	0.316	6.622
1887-95	3.899	2.350	0.160	0.227	6.630
Averages.	3.743	2.462	0.172	0.306	6.681

So marked has been the change in the acreage under the bread-making grains, relatively to the consuming population, *that the area employed in growing wheat, rye, spelt, maslin, and buckwheat is now two million acres less than fifteen years ago, and but twenty million acres greater than in 1871.* Had the rate of area increase equalled the 37.5 per cent at which the "bread-eaters" increased, additions to the bread-grain area, since 1871, would have aggregated much more than 80,000,000 acres, instead of the meagre 20,000,000. This startling disparity in the rates of increase indicates either an excessive acreage in 1871, or one now largely defective. That the acreage was not excessive in the early part of the eighth decade is evident from prices then obtaining, and the absence of unmanageable surpluses of grain.

	1871.	1882.	1897.	Increase, %.
"Bread-eating" Population	371,000,000	422,000,000	510,000,000	37.5

Grain.	1871. Acres.	1882. Acres.	1896. Acres.	Increase or Decrease in 25 years, %.
Wheat	125,800,000	150,000,000	158,000,000	25.6 +
Rye	111,000,000	110,500,000	106,500,000	4.1 -
Spelt and Maslin.	5,700,000	4,900,000	4,400,000	22.8 -
Buckwheat.....	16,200,000	14,900,000	9,500,000	40.8 -
Total.....	258,700,000	280,300,000	278,400,000	7.6 +

Movements of the "bread-eating" population, and acreages under the bread-making grains in the regions inhabited by the "bread-eaters," and which contribute their entire product, exclusive of quantities required for seed, to the food supply of such populations, have been, since 1871, as shown in the preceding table.

This exhibit is significant in many respects. The wheat area of the countries inhabited by the "bread-eaters"—who procure less than 1 per cent of their supplies from Asia and North Africa—is shown to have increased 24,200,000 acres, or 11.2 per cent, between 1871 and 1882, and but 8,000,000 acres, or 5.3 per cent, between 1882 and 1896; the increase in twenty-five years equalling 25.6 per cent, as against a population increase of 37.5 per cent.

Outside of the regions inhabited by the "bread-eaters" there are—in India, Persia, Asiatic Turkey, and North Africa—some 40,000,000 acres employed in growing wheat; but exports from all such regions aggregate, in recent years, less than 20,000,000 bushels per annum, and decline gradually as the populations of such countries increase; hence, for the bread required, the populations of European lineage must rely, for more than 99 per cent, upon the "contributory areas" they occupy.

The full significance of the wide difference in the rates at which acres under the bread-making grains and the units consuming such grains have increased since 1871 is shown in the following table:

Grain.	Fraction of Acre per Unit.			Loss in unit quota, part of acre.	Ratio less than in 1871, %.
	1871.	1882.	1896.		
Wheat.....	0.339	0.356 +	0.310 —	0.029 —	8.6 —
Rye.....	0.297	0.262 —	0.209 —	0.088 —	29.3 —
Spelt and Maslin.....	0.015	0.012 —	0.009 —	0.006 —	40.0 —
Buckwheat.....	0.044	0.035 —	0.019 —	0.025 —	56.8 —
Totals.....	0.695	0.665 —	0.547 —	0.148 —	21.3 —

It appears that while the average *acreage* quota, under the bread-making grains, of the "bread-eating" unit was 0.695 of an acre twenty-five years ago, *it has since been reduced by more than one-fifth*. This portentous fact indicates that statesmen must soon face more serious problems than those of the tariff and the currency.

Although the United States contributed 17,000,000 of the 24,000,000 acres added to the wheat-fields of the world between 1871 and 1882,

yet the wheat area of the United States in 1897 is quite 3,000,000 acres less than 15 years earlier; and of additions to the world's wheat area since 1882, aggregating 8,000,000 acres, we have contributed not one acre. It is noteworthy that when the United States ceased adding to its wheat-fields, those of the world ceased to keep pace with the increase of the "bread-eating" population, and are now greatly deficient. *So great is the deficit that, with acre-yields no better than the average of 12.7 bushels of the last twenty-six harvests from "contributory areas," the output would be 275,000,000 bushels—or the net product from some 27,000,000 acres—less than present needs.*

That is, population and requirements have increased so much more rapidly than wheat-bearing acres that, but for an unprecedented succession of seasons, over world-wide areas, conducive of exceptionally high "over-average" acre-yields, present conditions, respecting supplies and prices, would have obtained years since. But for the disparity which has existed between the rates at which the consuming element and bread-bearing acres have increased, the world's area employed in growing wheat and rye would be at least 50,000,000 acres, or 19 per cent, greater than now. In other words, *there exists an acreage deficit of the two principal bread-making grains of more than fifty million acres*, while there is even a greater relative deficit in the areas employed in growing such bread-making grains as spelt, maslin, and buckwheat, which show an absolute shrinkage of 8,000,000 acres, or 36.5 per cent, since 1871; thus imposing an additional duty upon wheat equivalent to the net product from 8,000,000 acres of such grains.

Unless, as seems desirable, the United States shall convert a portion of its over-abundant maize lands into wheat-fields, any material increase of the world's wheat area is probable only in South America, although the belief is very general that the trans-Siberian railway is about to open a vast region adapted to the production of wheat and rye. It would be difficult to conceive a more baseless belief, as at most not more than 50,000,000 acres of all Siberia can be regarded as cultivable. Much more than one-half the cultivable land of Siberia has already been occupied by communes of Russian peasants and employed in the production of the staples required by a population of about 6,000,000. When the Russian Minister of Ways and Communications—Prince Hilkoﬀ—was in Kansas City last October he stated, in reply to a direct inquiry respecting the future of cereal production in Siberia, that, *"Siberia never had produced, and never would produce wheat and rye enough to feed the Siberian population."*

Argentina and Uruguay alone promise material additions to the world's wheat-bearing area; and, together, they have an area potentially wheat-bearing about equal to three or four of our central States. For years to come development must be slow, as the essential of population is lacking; a dearth of laborers being yearly experienced at seed-time, as well as during harvest.

Since 1884, the wheat area of the United States has diminished about as much as that of South America has increased. The acres taken from our wheat-fields have necessarily been employed in growing the forage, fruits, vegetables, and dairy products required by a rapidly increasing population; increasing requirements for hay alone absorbing as many acres as have been added to the cultivated area since 1890.

If the acreage deficit has increasingly existed—as it has—since the middle of the ninth decade, and is still constantly growing, only anomalous conditions affecting production could have so masked it that scarcity and extremely high prices should not have long since obtained, instead of that over-abundance which has discouraged the grower, and given birth to political parties in Germany and the United States. Such anomalous conditions have existed, and resulted from that operation of natural forces which brings successions of seasons of dearth at one time, and successions of seasons of exceptionally great acre-yields, over world-wide areas, at others.

A notable succession of bad seasons, affecting all Europe, was that extending from 1692 to 1699, and which is embalmed in history as “the seven barren years at the end of the seventeenth century.”

From 1771 to 1793, Europe was favored with a succession of seasons when the greater part of the harvests were above the average, and “plenty reigned.” Dearth, however, was common in 1795 and 1796; and 1799 was the first of the dreary succession of years of deficient production extending till 1821. Within this period, of the same duration as the preceding plenteous one, more than three-fourths the harvests were materially defective, those of 1800, 1801, 1809, 1810, 1811, and 1816 being extraordinarily so. In 1798, wheat was selling in London for 66 cents a bushel; rose to 94 cents in 1799; advanced to \$4.90 in 1800; and sold as high as \$5.40 in 1801; the average for the 21 years having been \$2.10 per bushel.

During this period crops were also defective in America; and while records of American prices are scanty, we know that rye sold for an average of \$1.38 in Massachusetts during the first 20 years of this century, as compared with \$1.02 for the preceding 20 years and 89 cents

for the ten years ending with 1830. In December, 1795, Lord Sheffield, in treating of the then existing scarcity, stated in Parliament that in the preceding August wheat had sold for \$3 a bushel at Philadelphia.

From 1821 till 1882, world-seasons were so equable, and acres so well proportioned to increasing world-requirements, that prices were comparatively constant; never, in England, falling below \$1.20 per bushel, and but rarely below \$1.40, while but twice, for periods of three and two years respectively, rising to or above \$2 per bushel. In 1839, 1840, and 1841, the rise resulted from scanty harvests in both Europe and America. In the other case the advance followed from the Crimean war, when production equalled requirements.

Owing to the addition of more than 17,000,000 acres to the wheat-fields of the United States between 1870 and 1880, the very scant European harvests of 1879 and 1880 caused only moderate advances in prices for the bread-making grains, although serving, by an exhaustion of reserves, to prevent the rapid fall that would have followed had those harvests been as abundant as that of 1882. From and after 1882, however, prices fell rapidly until the year of the Russian famine. The harvest of "contributory areas" in 1882 exceeded the average of the preceding three by as much as 320,000,000 bushels, or 18 per cent, and, with imports of 40,000,000 bushels from Asia and North Africa, exceeded requirements by 160,000,000 bushels. Had the harvest of 1882 not been followed by one still larger in 1884, and that by others of equal value in 1887 and 1888, the decline in price would have been arrested, as consumption was then, as now, increasing more rapidly than grain-bearing acres, while *not an acre had been added to the world's wheat and rye area since 1884*. The fact is, that the enormous world-crop of 1882 was but the beginning of an almost continuous succession of great world-crops of wheat, so much above the average in acre-yield that the *over-average* product of the fifteen harvests ending with 1896 was more than 1,200,000,000 bushels, although four of the fifteen gave acre-yields somewhat below the average. This added to our store of supplies 1,200,000,000 bushels of wheat, and an immense synchronous *over-average* production of rye, as well as a great augmentation of exportable Russian surpluses of wheat and rye, by reason of the decline of 13.5 per cent in unit consumption of bread in Russia. These conditions served completely to obscure the existing acreage deficit; to depress prices to an unremunerative level, and to store up great reserves that enabled the "bread-eaters" of 1895 to secure abundant supplies,

notwithstanding the fact that the wheat harvest of 1895 in "contributory areas," plus imports from Asia and Africa, was 75,000,000 bushels below requirements. It served also to furnish all needed supplies in the 1896-7 harvest year, despite the fact that the product from that year's harvest in "contributory areas," plus imports from Asia and Africa, was 138,000,000 bushels below the year's requirements.

Reserves having been reduced to the lowest point consistent with safety, conditions relating to requirements and supplies are, with the defective harvest of 1897, radically different from those which have prevailed in every year since those earlier ones of the century when the price rose to four and five dollars a bushel, as it is now, again, impossible to supplement a wholly insufficient harvest by any considerable remainders from previous ones. From 1882 till 1889, and from 1890 till 1896, great reserves were available to make good small deficits from the four under-average harvests garnered since 1882.

The following comparative statement of requirements and the extent and sources of available supplies, in each of three harvest years, will aid to a clear conception of the present situation, it being borne in mind that official data are used for 95 per cent, and commercial estimates for 5 per cent, of the product of 1895 and 1896. The "wheat grown" in 1897 is but an estimate based on official indications at harvest time in the principal countries, although such countries are invariably credited with larger outputs than official indications warrant. For instance, the United States is credited with a crop of 525,000,000 bushels, although official indications point to one of only 460,000,000 bushels. Moreover, Asia and Africa are credited with the ability to export 10,000,000 bushels; but such exports, if made, must in large part result from crops not yet sown.

SUPPLIES AND REQUIREMENTS.

	1895-6. Bushels.	1896-7. Bushels.	1897-8. Bushels.
Wheat grown	2,157,000,000	2,130,000,000	1,900,000,000
Imports from Asia and North Africa }	23,000,000	15,000,000	10,000,000
Old wheat consumed.....	75,000,000	138,000,000	
Total supplies.....	2,255,000,000	2,283,000,000	1,910,000,000
Seed and food required.....	2,255,000,000	2,283,000,000	2,310,000,000
Indicated deficit of the 1897 harvest.....			400,000,000

As the food requirements of the 510,000,000 "bread-eaters" of 1897 aggregate 1,990,000,000 bushels, and as there will, apparently, remain but 1,590,000,000 bushels after setting aside 320,000,000 bushels for seed, *it follows that but three-fourths of the required bread can be provided*, unless larger drafts than now seem possible can be made upon reserves reduced to the lowest point consistent with the safety of the exporting nations.

Relatively, as great a deficit exists in the 1897 rye harvest; and Europe's potato crop is apparently defective in the nutritive equivalent of 150,000,000 bushels of wheat; while spelt, maslin, and buckwheat are deficient by more than 30,000,000 bushels.

That scarcity and high prices have not prevailed in recent years is due to the harvesting, since 1889, of seven world-crops of wheat and six of rye, giving outputs so much above the average as to result, prior to 1895, in great accumulations that served to obscure the fact that the harvests of 1895 and 1896 were each much below current requirements. As reserves will wholly disappear this year, requirements must hereafter be met from current harvests, accumulation being impossible. This is obvious from the fact that an output equalling that of 1894 (the greatest crop ever grown, both in acre-yield and in the aggregate) would be less than present needs.

The situation will be brought into clear relief by stating that in the last six years Europe has grown and imported 9,930,000,000 bushels of wheat, or an annual average of 1,655,000,000, of which some 210,000,000 yearly have been used as seed, the remaining 1,445,000,000 serving to feed a population averaging 380,000,000; the annual average unit supply having been 3.8 bushels. This year there are 392,000,000 European units to be fed, requiring 1,490,000,000 bushels of wheat.

Europe's harvest will provide less than 1,200,000,000 bushels; leaving more than 500,000,000 to be derived from external sources. After furnishing 35,000,000 bushels to tropical and island customers, it is possible that North America can spare 140,000,000 bushels for Europe. Should the crops sown, and to be sown, in South America, India, and Australasia prove to be maximum ones, then it is only *possible* that Europe may, before August, 1898, secure 90,000,000 bushels from such sources. Such an improbable outcome, however, would, even then leave, unprovided for, a demand for nearly or quite 300,000,000 bushels of wheat, 250,000,000 bushels of rye, 30,000,000 bushels of spelt, maslin, and buckwheat, and of potatoes the equivalent, in nutritive value, of 150,000,000 bushels of wheat. In other words, after Europe

shall have exhausted all possible supplies from the harvests of 1897, and such crops as may be harvested prior to July, 1898, there will apparently be a deficit of the equivalent of 700,000,000 bushels of the bread-making grains, with no resource except meagre remainders from former harvests, and with no substitution possible, unless Europeans can be induced to eat corn-bread.

When we reflect that although the world's output of wheat in 1897 is several hundred million bushels less than requirements, acre-yields have been but little below an average; that an average yield from the acres now employed would be 275,000,000 bushels less than present needs; that the greatest crop ever grown would not equal present requirements; that requirements for wheat and rye progressively increase, year after year, by more than 40,000,000 bushels; that not an acre has been added to the aggregate of the world's bread-bearing area since 1884; that while yearly increasing needs in the 'seventies implied average yearly additions of less than 2,800,000 acres, they now imply additions of more than 4,000,000 acres of wheat and rye per annum; that not in a single year since 1880 have additions to the acreage equalled the year's increased needs; that but for an "over-average" production of wheat and rye aggregating more than 2,300,000,000 bushels since 1881, and extraordinary exports from Russia of more than 1,300,000,000 bushels,—because of declining unit consumption in Russia,—the supplies of the importing nations would have aggregated some 3,600,000,000 bushels less in the last sixteen years; that the world can expect no better than average acre-yields, no matter what its necessities; that not even when the great valleys of North America were being developed did annual additions of bread-bearing acres exceed two-thirds present increases of annual requirements, and that an acreage deficit exists equal to the supply of as many "bread-eaters" as have been added to the world's population in the last twelve years, we can begin to understand the present situation. We can also realize the nature of the task before the world in an effort to eliminate an enormous area deficit,—which means that, simply to meet each year's increasing requirements, it must annually add one-half more acres than ever before,—and what is likely to be the situation, respecting supply and demand, if the world should, as is by no means improbable, again harvest in succession, three such crops as those of 1879, 1880, and 1881,—crops which gave acre-yields materially below that which now results in a deficit of one-fifth, or, possibly, one-fourth, the bread required.

C. WOOD DAVIS.

STATISTICS *VERSUS* SOCIALISM.

THE first settlements in this country were made by people seeking a larger degree of freedom than that which they had enjoyed in Europe. They sought not merely religious and political freedom, but social and industrial freedom as well. They desired a field for enterprise and personal initiative. Europe had progressed along this line slowly from century to century for three or four hundred years; but even as late as 1600 social freedom had not made any great progress. It is true there had been a movement in all Northern Europe toward the right of private judgment in matters of religion. This was Protestantism; and it was followed by a revolt against the divine right of kings, especially in England. Individualism, for all this, did not gain very much at home in Europe, but acted chiefly to drive peoples out from Europe on adventures, and to colonize America. Thus North America came to be settled by people who desired above all things to be free from dictation on the part of the social whole. Each individual wished to reap the fruits of his own deeds, and to be called upon to make as small a contribution as possible to his colonial government; and, as to contribution to the home government in Europe,—he desired to be rid of that altogether. This sturdy discipline of individuality went on for a hundred and fifty years, more or less; and then came the Declaration of Independence on the part of the North American colonies. The United States, as a separate nation, has now completed a hundred years more of individualistic growth. This movement culminated in the Civil War, in which the majority of the nation compelled the minority to recognize the individual rights of an inferior race, and emancipate it from the domestic slavery in which it had been nurtured for two hundred years. The modern spirit could not endure slavery, because that institution takes no recognition of the deeds of the individual. It gives him subsistence, food, clothing, and shelter, whether he earn much or little. It recognizes the right to life, but not to liberty. Individualism values liberty more than life.

The chief occupation of civilization in the last fifty years of its career has been to emancipate each person from the control of the