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Civilization at the Crossroads

By John U. Nef

I.

The Rise of Industrialism

THE EXTRAORDINARY prosperity of the Western peoples in Europe and America at the beginning of the twentieth century, on the eve of the first World War, was reached after a long series of efforts which began at about the time Leonardo da Vinci was born in 1452. In contrast to the fourteenth and early fifteenth centuries, the late fifteenth and early sixteenth centuries were a period of prosperity in most districts of continental Europe. The Middle Ages drew to a close in the midst of great movements of discovery, colonization, and economic progress.

Between 1450 and 1530 the annual output of silver probably increased at least fivefold in Central Europe.¹ There and in other continental countries the production of copper, tin, iron, salt, and cloth grew almost as rapidly as that of silver. Printing was introduced in scores of towns in Germany, Italy, France and the Low Countries. A number of products such as paper, soap, glass, and gunpowder, for which the demand had been slight, were coming to be manufactured for the first time in considerable quantities. All over the Continent, the palaces of merchants, and the town halls and municipal law courts representing a flourishing mercantile society, were rising in profusion. Kings and princes, lay and ecclesiastical, were building vast castles mainly outside the old towns. Many of these castles were placed to dominate bourgs and villages. In some districts, particularly in Flanders and Brabant, the textile industries were spilling over beyond the ancient walls within which they had been largely confined. The cloth workers and merchants were transforming ancient villages into populous settle-

1. For the calculations on which this statement is based, see my article, "Silver Production in Central Europe, 1450-1618," to be published in the August number of the *Journal of Political Economy*.

ments, with streets shooting out in all directions — from a central square — “like the rays of a great star” at night.²

Elsewhere, particularly in Central Europe, thousands of miners and metallurgical workers were forming equally populous centers in the hills, the high valleys and the mountains. Great horse-driven engines pumped up water from depths of several hundred feet to drain the pits. In at least one case some of the horses were driven to their stations down into the earth along a ramp, which wound about the main shaft like a screw.³

These economic changes of the Renaissance were symptoms of a great new movement among the Western peoples, destined to develop a conception of the end of man fundamentally different from the one associated with the Middle Ages. The means devised for getting horses into the earth to pump water out of mines was a sort of symbol pointing the way to those ingenious ramps for parking automobiles, so typical of the industrial civilization toward which the Renaissance miners were inadvertently working.

The modern movement has been expansive to a degree without parallel in the whole of history. The search for new continents and for a new celestial world, the development of contrapuntal music, and of new ways of creating a sense of distance in painting with perspective and color, the use of gunpowder to drive projectiles, the creation of credit money — Oswald Spengler has described these and many other of the expansive characteristics of the Western peoples in his celebrated book.⁴ It is not necessary to accept his main thesis that the only future for Western civilization is in military despotism, in order to recognize the essential truth of this description.

On the industrial side, the expansion has taken various forms. The Western peoples aimed to multiply indefinitely, and at an ever increasing rate of growth, the volume of ores and minerals, metal and cloth,

2. In Pirenne's picturesque language (Henri Pirenne, *Histoire de Belgique*, vol. iii, 3rd ed., Brussels, 1923, p. 236).

3. For the description on which this and the previous paragraph are based, see my “Industrial Europe at the Time of the Reformation,” in *Journal of Political Economy*, vol. xlix, nos. 1 and 2 (1941), pp. 1-40, 183-224.

4. *Der Untergang des Abendlandes*, 2 vols., Munich, 1922. English translation by C. F. Atkinson, *The Decline of the West*, 2 vols., London, 1926, 1928.

and durable goods of every kind produced each year. At the same time, and as a means of increasing the volume, they increased the size and scale of industrial units with the help of more and more powerful machinery, both by combining various industrial processes and by assembling workpeople engaged in the same process in larger and larger establishments.

The late fifteenth and early sixteenth centuries were the time of Machiavelli. They were a period of growing despotism in Europe, above all in Italy and in the small German states that formed part of the disintegrating Holy Roman Empire. There was a conflict between this rise of despotic government and the aspirations of the Renaissance for a fuller life here on earth for individual man. At a time when the ideal of renunciation to the divine will was beginning to lose its hold over men, princes and their advisers were asking for a new kind of renunciation. They were asking the individual to accept the dominion of civil authority independently of the divine will, to accept the lordship of a man over men. In the early sixteenth century that conception of civil authority seemed about to triumph among the Western peoples everywhere in Europe. We Americans were brought up to think of the modern age as an age of liberty. But it was under the auspices of growing authority and not of liberty that the modern age was ushered in.

In a famous generalization, Jean Bodin, the greatest political thinker of the late sixteenth century, laid it down that peoples living in a relatively cold climate — people living in the north or in mountainous country — were naturally inclined towards popular government or at least towards elective monarchy.⁵ The challenge to absolutism which came after the Reformation came especially in the countries of northern Europe. These countries had participated least in the industrial expansion of the late fifteenth and early sixteenth centuries. The challenge came in the late sixteenth and seventeenth centuries. It came at a time when the torch of commercial and industrial leadership passed from south Germany, Italy and Spain to the United Provinces, Sweden and

5. Jean Bodin, *Les six livres de la République*, Paris, 1583, bk. v, ch. i (esp. p. 694). Of course Bodin recognized that geographical conditions were only one of a number of factors that determined the inclinations and manners of a people. He recognized that the natural inclinations of a people, as derived from geographical conditions, might be greatly changed, if not completely transformed, by other circumstances.

above all Great Britain. In regions where the climate is harsh and the problem of wringing a living from the soil is challenging, the Europeans set about to secure comforts and ease never enjoyed by the inhabitants of those parts of the earth where nature is kinder to man.

The new economic development that followed the Reformation differed in fundamental respects from that of the Renaissance. In the north men turned away from quality in the direction of quantity. They turned away from splendor and beauty in the direction of plenty and comfort. In mining they turned away from silver-bearing ore in the direction of coal and iron ore. Especially in Great Britain they turned increasingly away from warfare and the preparation for warfare toward peaceful occupations. In the creation of the new world, with its great emphasis on material values, the learning bred of the Renaissance and the conception of human life in this world as an end were not lost sight of. Until very recent times the intense belief in the importance of right moral conduct, derived from the Reformation, and especially from Calvinism, was cultivated. But in Holland, England and its American colonies, the motives of private profit and individualism, which Calvinism itself and most of the other Protestant creeds were ultimately to encourage, were allowed a freedom that conflicted with the growing despotism of most continental princes.

In Great Britain an early industrial revolution changed the economic map of Europe between about 1575 and 1620.⁶ It made England the leading power in the world in the mining and heavy manufacturing industries. It was followed by more than a hundred years during which commerce grew and with it the volume of industrial production, but at a somewhat slower rate than in the hundred years following 1540. The second English industrial revolution of the late eighteenth and early nineteenth centuries is one with whose main characteristics we are all familiar. We are told in the high schools and in the colleges that it began about 1760. That is a convenient date. It is the date of the acces-

6. Cf. Nef, "The Progress of Technology and the Growth of Large-Scale Industry in Great Britain, 1540-1640," *Economic History Review*, vol. v (1934), pp. 3-24; "A Comparison of Industrial Growth in France and England, 1540-1640," *Journal of Political Economy*, vol. xl (1936), pp. 289-317, 505-33, 643-66; "Prices and Industrial Capitalism in France and England, 1540-1640," *Economic History Review*, vol. vii (1937), pp. 155-85.

sion of George III. But there is not much justification for selecting 1760 as the year in which the "industrial revolution" began. In France a rather striking industrial development had got under way before that year.⁷ In Great Britain it was not until the eighties and nineties of the eighteenth century that the use of coal in smelting iron ore and of steam power in manufacturing began to tell heavily in the industrial life of the country. By that time the new canals and the improved roads were greatly cheapening the cost of carrying bulky goods. They were opening new markets at home.

The fall of Napoleon in 1815 ushered in for all the European states a century of peaceful relations without precedent in earlier Western history. The end of serious warfare was followed soon by an era of free trade and by a revolution in transportation produced by the introduction of steam. All the elements necessary to the consummation of a long process of material improvement and expansion, stretching back to the Reformation and even to the Renaissance, were present. The industrial revolution of the Elizabethan age could now be repeated on a grand scale. It was repeated in the nineteenth century as a movement of the European peoples everywhere, in Europe itself, in America, and eventually even in Asia.

Sir John Seeley's celebrated epigram about the English having "conquered and peopled half the world in a fit of absence of mind" can be interpreted in various ways.⁸ What is important for us to remember here is that the ascendancy of British ideas in modern times was achieved in a considerable measure not by the force of arms. Much is made by Britain's present enemies of the vast territories which are united under the English crown. But the governing power exercised by England in its colonies and dependencies counted for less in Europe, in the late eighteenth and nineteenth centuries, than the moral and intellectual ascendancy of English civilization in the far more powerful countries of the Continent over which England exercised no political authority. The materialistic way of life, which the English were the first among

7. Cf. Nef, "English and French Industrial History after 1540 in Relation to the Constitution," *The Constitution Reconsidered* (ed. Conyers Read), New York, 1938, pp. 93-94.

8. *Expansion of England*, London, 2nd ed., 1904, p. 10; cf. Conyers Read, *The Case for the British Empire*, Philadelphia, 1941.

the Western peoples to cultivate, achieved a bloodless conquest in Europe, because it conformed in a considerable measure to the wishes of the inhabitants and of the leaders of European thought. Beginning in the eighteenth century foreigners began to admire England's material success and the lofty conception of the value, the rights and also the obligations of the individual, which accompanied that success. Foreigners set about consciously or unconsciously to copy or to adapt to their own countries the English intellectual outlook and political philosophy, especially in its relation to economic and social life. The belief that economic improvement and expansion provided the main keys to general happiness led to a growing admiration for natural science and mechanics both on the Continent of Europe and in the New World. Foreigners began to share with Englishmen the further belief that economic improvement and expansion were encouraged by popular sovereignty and constitutional government. Continental Europeans began to think that a minute regulation of economic life by the state and a participation by the state in economic enterprise, such as they had been accustomed to, were obstacles to progress. Progress was everywhere becoming the chief object of statesmen and of the people they governed.

In the late nineteenth century the Western European races, which had expanded since the Middle Ages over a great part of the globe, seemed on the point of agreeing upon a new conception of the end of life. The conception may perhaps be summed up in the words, the greatest economic good for the greatest number. For most people it was difficult to see how this conception, and the increasingly humane ways of treating men that had accompanied its spread, could fail to gain in strength and to win firmer adherence throughout the world during an indefinite future. The benefits of the new way of life were everywhere so obvious that it seemed incredible, particularly to the British and the Americans, that men would ever relinquish so fruitful a conception. The standard of living was rising in every land. Peace was coming to be regarded as the normal condition for mankind. Tourists moved from one European country to another with the most perfunctory examination of their luggage at the frontiers. No American traveler thought of getting a passport unless he intended to travel in what were regarded as semibarbarous countries such as Turkey or Spain.

The nineteenth century drew to its close in a delicate haze of hope. The Spanish-American War and the Boer War were ending with little loss of life and with little damage to economic welfare. Few people in America or Great Britain dreamed that the time would come soon when all the able-bodied young men in every land would be bearing arms and facing death on the battlefield, in the air and on the sea. Even in nightmares almost no one imagined that great cities would be bombed and largely destroyed by hordes of fast-moving planes. 1899 and 1900 were summers full of brilliant sunshine. They produced some of the most perfect clarets in history. Most influential people saw the world through the clear ruby colors of those wines. They mistook twilight for dawn.

We now see that this happy hope of a better world than any which earlier civilizations had created may have been no more than a dream. The Balkan Wars were a prelude to what was up to then the greatest war in history, in point of the number of large nations and of people involved. During the sunny months of August and September, 1914, it seemed as if all the European blood that had been spared during a hundred years of virtual peace, with its humane ways, spurted out in forty days over the fields and amid the hills and woods of Belgium, the Rhineland and northeastern France.

For nearly a decade after the unprecedented slaughter of that terrific four-years' war, when men learned to fight from trenches and to live in deep underground tunnels such as none but miners had hitherto inhabited, it seemed to Englishmen and Americans that it all had been a mere interlude in the long era of progress. Then the knowledge that had been possessed earlier by some wise men, that all was not right with Western civilization, began to spread. It became apparent that an epoch was ending. Even a few complacent and comfortable Americans, living in the Middle West or on the Pacific coast, have begun to wonder whether we are all getting better every day and in every way.

The position of the United States, the richest of all countries, isolated as she remains to some extent, in spite of the new means of transportation and destruction, from the rest of the world, imposes upon Americans special obligations in the new epoch that looms in front of

us. At least for the moment, this country has greater freedom than any other to work out some rational conception of civilization to take the place of those conceptions which made the thirteenth and the nineteenth centuries such glorious periods for the Western peoples. The difficulties are enormous. For one thing it is not in our tradition to lead either in thought or art. In almost all the great intellectual and artistic movements of modern times, we have been tributary to Europe. We are imbued more than any European state with the expansionist frame of mind with respect to the output of physical goods, and we assume that the chief, if not indeed the only, objective of a nation is to go on increasing this output. Hence the need for a reconstruction in the ideas and forces which direct mankind is less widely recognized here than in other countries. Yet our future as a nation and even the future of Western civilization may well depend upon our success or failure in carrying through such a reconstruction with little delay. The first step perhaps toward bringing American opinion to recognize the need of a reconstruction of the world of thought with which university professors are still ostensibly concerned, is to show that we cannot look forward to an indefinite continuation of the expansive movement of material production in which our fathers and grandfathers and great-grandfathers lived their lives. We can no longer look forward to a continually mounting rate of increase in the national dividend. At the same time we are confronted by a breakdown in the guiding principles, moral and intellectual, which made that expansive movement in the material sphere orderly, which may even be said to have made it possible. Let us now consider a little more closely, first the material crisis and, secondly, the moral and intellectual crisis of our time.

II.

The Material Crisis

I spent some ten years in trying to prove that the rise of our modern industrial civilization is bound up, even as far back as the late sixteenth and seventeenth centuries, with the burning of coal — a fuel of which no earlier civilization made extensive use.⁹ I do not flatter myself that

9. *The Rise of the British Coal Industry*, 2 vols., London, 1932.

the results of my researches have made a wide impression. But as far as I am aware, my conclusions have not been challenged. If I was right, the history of fuel during recent decades suggests that we are now entering a new economic age. It suggests that the industrial civilization which coal has done so much to nourish is reaching a turning point.

Ever since the late fifteenth century, when the coal mines around Liège and just west of Mons, discovered probably before 1200, were exploited with greater vigor than ever before, the world output of coal has increased continually, rapidly and almost uninterruptedly from decade to decade. In the nineteenth century the rate of increase became phenomenal. The great movement of rapid increase lasted some 450 years. It seems to have come to an end. Since the outbreak of the first World War the output of coal has grown very little. During the two decades 1914-1933 it did not increase at all. In the United States the output has declined somewhat. If world production had increased since 1913 at the same rate as from 1864 to 1913, the annual output on the eve of the present war would have been at least 4,000 million tons.¹⁰ In fact the output was only about 1,500 million tons.

This great change in the course of coal production has not been caused primarily by the exhaustion of the supplies. Modern scientific and engineering skill has made it possible to estimate with reasonable accuracy the coal resources of the globe. At the maximum rate of consumption reached in the present century, the world's coal supply would probably not be exhausted for many hundreds of years, though the difficulties of obtaining coal would obviously increase with the necessity of extracting it at ever greater depths. What has brought the expansion in coal output to such an abrupt end is only partly the substitution for coal of other fuels, for example oil and heat generated by hydro-electric power. The main explanation of the change in the course of coal production since 1913 is the virtual halt in what had been for a great many decades a phenomenally rapid growth in the total demand for energy.

The future of oil is more uncertain than that of coal. In its natural state in the earth, oil is an elusive liquid. It moves about so rapidly and so capriciously that it is continually playing hide and seek with the geo-

10. Cf. W. Bowden, M. Karpovitch and A. P. Usher, *An Economic History of Europe since 1750*, New York, 1937, pp. 667-69.

logical experts sent out to determine its quantity. While estimates vary, so far as I am aware no one claims that at the present rate of consumption the reserves of oil will last nearly as long as the reserves of coal. It is pretty generally agreed that if the hydro-electric power throughout the world is fully harnessed to serve industry, it cannot provide, under present conditions of transmission, all the heat now supplied by either coal or oil.

Further rapid expansion in the use of fuel and power, of the sort to which the Western people have grown accustomed, depends then partly upon the development of cheaper methods of generating heat from coal, oil and hydro-electric power, and upon the exploitation of other sources of fuel, which the recent and future discoveries of the natural scientists and engineers may make available. For a nonexpert to hazard a prediction concerning the possibilities of either of these developments would be presumptuous, especially when the experts themselves are apparently quite uncertain about the future. This much seems clear. If a great expansion in the use of fuel were to take place during the next two hundred years, it would be an expansion based on different forms of fuel than those with which Western peoples accomplished the economic conquest of the world. It would presumably call for a different kind of economic order from that associated with the rise of industrialism.

The probabilities are against an increase in the use of heat during the next two centuries at anything like the same rate as during the last two. A conservative estimate would put the increase since 1740 at something like two or three hundred fold. A similar rate of increase during the next two hundred years would exhaust all the supplies of coal and oil long before 2140 A.D., even if much more efficient methods of burning them were employed. Unless we escape altogether for our fuel from the material resources of the earth itself, a point will be reached where the limitations of these resources will impose limits upon further industrial expansion.

Almost eighty years ago W. S. Jevons, the eminent English economist, pointed out that the exhaustion of the British coal supplies was bound to bring about a decline in the rate of industrial progress in Great Britain within a century.¹¹ In spite of the extensive use since he

11. *The Coal Question*, London, 1865 (see the third edition revised by A. W. Flux, London, 1906).

wrote of oil and water power as substitutes for coal, his prediction is coming true, though the change is due less than he supposed to the exhaustion of natural resources and more to a slackening in the growth of markets. The rate of increase in industrial output in Great Britain has slowed down very greatly during the past eighty years. As measured by the volume of production, industrial progress during that time has been much slower in Great Britain than in the other chief industrial nations of the world, though Great Britain had so imposing a lead in 1865 that she has remained ahead of all the other nations except Germany and the United States.

Jevons' generalization can now be applied to these other nations. In spite of possible future improvements in the methods of using all kinds of fuel, and in spite of the possible use of new fuel, the exhaustion of the coal supplies of the world will be likely to bring about a decline in the rate of industrial growth during the century that lies ahead of us. When we think of the fantastic implications of an increase of two hundred fold or so in the use of energy during the next hundred years among people already surfeited with mechanical devices and gadgets, it may be doubted whether such a probability should be the cause for unmixed regrets.

Any attempt to account for the rise of industrialism, even in the purely material sense, in terms of cheap fuel alone would be extremely one-sided. Coal, oil, and other underground substances, have existed in the earth probably as far back as the time when man first appeared on this planet. Yet even in Great Britain it is only in the last four hundred years that the subsoil came to be the principal source of fuel. Among the Western peoples generally it is only during the last hundred and fifty years that most of their fuel has been dug out from subterranean passages or pumped up from wells.

What material forces have driven man at this late stage in his development to push manufacturing and transportation to such a point that they could be nourished only by new kinds of fuel and power? The answer to that question is to be found mainly in a study of markets, and of the material factors that have contributed to their extraordinary growth during the last four or five centuries, and more especially since the era of the Napoleonic Wars. The future of industrial output and of large-scale enterprise in the centuries that lie ahead of us depends less upon the supplies of cheap fuel made available to generate com-

modities than upon the further expansion of markets. As we have seen, the chief explanation for the slow growth in the production of coal since 1913 had been the slow growth in the demand for energy.

Historians now think that every age of very rapid increase in commercial activity and industrial production has been an age of growing population. There has perhaps never been a period in the whole of civilized history when the population of the world has increased at anything like as rapid a rate as between about the middle of the eighteenth century and the beginning of the twentieth. It was the Western people, the creators of industrialism, who took the lead. Around 1740 the inhabitants of Western Europe probably numbered not more than seventy or eighty millions.¹² The peoples of European stock in America numbered perhaps four or five millions. At about this time the English and French peoples began to multiply rapidly. The increase soon extended to all the European peoples. On the eve of the first World War there were more than four hundred millions of them in Europe and overseas. France was about twice as populous as she had been a century and a half before; Germany perhaps three times or more as populous; England and Wales almost six times as populous. During the hundred and thirty years from 1790 to 1920 the population of the United States grew about twenty-seven fold, from just under four to nearly a hundred and six millions.¹³ Today almost all these countries are still more populous. In two centuries the population of Western European extraction in Europe and America has increased something like sixfold. The population of the world as a whole has probably at least doubled.

It needs no sophisticated mind to conclude that one explanation for the extraordinary increase in the volume of industrial output between the late eighteenth and the early twentieth centuries was the rapid growth in the number of persons to be fed, clothed, housed, transported, and entertained, as well as in the number available as workmen. The natural expansion in markets and in productive power, provided by the multiplication of the species, was something the like of which no great civilization of the past had ever experienced. Even in those countries

12. I include in Western Europe the countries included by H. Beloch ("Die Bevölkerung Europas zur Zeit der Renaissance," *Zeitschrift für Socialwissenschaft*, vol. III (1900), p. 786). He excludes Russia and the Balkans. The population of Europe was not much larger in 1740 than in 1600, when Beloch estimated it at 72 millions.

13. J. Russell Smith, *North America*, New York, 1925, p. 806.

where the growth had been least, there were generally two persons to supply in place of one; in many regions there were four, five and six for one; in some there were thirty, forty, fifty, and even hundreds for one.

One of the new phenomena that have accompanied the rise of industrialism has been the appearance of the statistician. Thanks to him we have for the first time in history fairly accurate statistics of the birth rate and the death rate year by year in most great countries. On the basis of trends revealed by these data, several learned statisticians have busied themselves computing the probable number of inhabitants in the future. A few learned historians have examined the history of earlier movements of growth in population. Both the statistical and the historical evidence suggest that the period of phenomenal growth is coming to an end, in so far as the population of Western Europe and North America is concerned. It has been freely predicted by statisticians that the Western races will no longer continue to multiply after a few decades, and that there is a probability of a decline during the next two centuries. The future course of population will not be determined by the statisticians. It is quite likely that their careful estimates will prove to be wide of the mark. But even if there should be a growth, anything like the rate of increase which accompanied the rise of industrialism would seem to be impossible. Such a rate of increase during the next two hundred years would give us by 2140 A.D. a population of some three thousand million people of Western European extraction. One does not need to be a statistician to predict with confidence that the actual number will fall far short of that colossal figure. The pressure exerted by growing population to increase the volume of output in Western Europe and America will be nothing like as great during the next two hundred years as it was during the nineteenth century.

The growth of industrial production during the last two centuries has not been exclusively, or perhaps even predominantly, the function of the growth of population. The output of coal, iron, steel, oil, glass has increased a great many times as rapidly as the population. Where in 1740 or even in 1800 were the railroad cars, the steamships, the automobiles, the airplanes which enable mankind to get about so quickly and so comfortably? Where were the radiators, the bathtubs, the electric refrigerators, and the air-conditioning devices? Where were the radio sets which some of our contemporaries regard as conspicuous marks of civilized existence?

One of our leading psychologists has recently measured the "General Goodness" of more than three hundred American cities, predominantly on the basis of statistics concerning the wealth and health of the citizens, and to a considerable extent in terms of the quantity relative to population of gas, electricity, telephones, automobiles, radio sets, and subscriptions to *Better Homes*, *Good Housekeeping* and the *Literary Digest*. He finds that nothing is more indicative of the "goodness of life for good people" than the abundance of dentists, though whether they should be regarded primarily as cause or as result of the "goodness" he is unable to determine. According to his exacting standards, Pasadena and, in the Middle West, Cleveland Heights, Oak Park, and Evanston come out on top. Charleston and Savannah come out at the bottom. If our psychologist had analyzed the Paris of Madame de Sévigné and Racine, or even the London of Newton and Boyle, he would have placed these cities far below present-day Charleston and Savannah in "goodness."¹⁴ He would have found them without any "measurable" civilization at all; he would have found them without gas, electricity, automobiles or radio sets, without *Better Homes*, even without dentists except for the few barber surgeons who jerked out aching teeth with primitive instruments of torture. Civilization measured in his manner has multiplied in the last two hundred years beyond recognition. However far short many American cities fall of our psychologist's goal, when we compare conditions with the past, the world, and particularly the American world, is now full of cities positively stuffed with the "goodness of life for good people."

As if in anticipation of our remarks about the "goodness" of cities of the past, Professor Thorndike writes, "Certain humanists who abominate all efforts to measure human values will object to the list of items and to the scores computed from them. 'The Florence of Dante and Benvenuto Cellini'¹⁵ would be rated far below some humdrum suburb. The Athens of Pericles would not rate as high as Athens, Georgia, by this inventory,' they will complain. 'It does not include the important things. Radio sets, free schools, swimming-pools and baby-clinics cannot

14. E. L. Thorndike, *Your City*, New York, 1939. I owe my knowledge of this book to my friend and colleague, Professor Robert E. Park.

15. Incidentally was the Florence of Dante (1265-1321) the same as the Florence of Cellini (1500-1571), who lived more than two hundred years later than Dante? While gas and electricity were not installed in the interval between the two men's lives, some important changes occurred, among them the discovery of America.

atone for bigotry and bad taste. What use are free libraries when the people read trash? It is better to live in a city that is mean by your standard if it has men and women sensitive to what is fine and noble.'

"The appropriate answer to such criticism is briefly as follows: The list of items is imperfect in respect of certain personal qualities in the population, as stated above, but is good as far as it goes."¹⁶ How far that is our author has not made clear. To determine how far that is we should have to turn to moral philosophy, in the ancient Aristotelian and Platonic sense, and that is a subject which few, if any, American students of man and society recognize as relevant to their work.

It is obvious that the tremendous increase in industrial output during the last two hundred years has been brought about by the rapid growth in the volume of production per capita as well as by the phenomenal growth in population. One of the most enterprising statisticians of our time, Mr. Colin Clark, estimates that the average Englishman on the eve of the present war was rather more than three times as well off in units of material welfare as his ancestor at the end of the seventeenth century.¹⁷ Why then should the decline in the rate of growth in population impose a limit upon the expansion of markets? All we need to do is to go on improving the material standard of living faster than in the past. Triple and quadruple the number of telephones, automobiles and dentists in Pasadena and Evanston, and equip the citizens with private airplanes in numbers sufficient to darken the sun. Raise Savannah and Charleston to the same high level of culture. Install several bathrooms of machine-made tile in the homes of share croppers. Carry the music and drama which come over the radio, together with the advertisements of new dental creams and cheap cigars, into the wastelands of Africa to edify the Negroes. Enclose whole towns in the tropics under one great roof and, by air conditioning, provide within them the temperature and the humidity which Professor Ellsworth Huntington considers ideal for white people to live in.¹⁸

It is possible that all these things will be accomplished. But the "scientific" evidence, for what it is worth, suggests that the physical standard of living is not likely to go on increasing as rapidly in the

16. Thorndike, *op. cit.*, p. 27.

17. Colin Clark, *The Conditions of Economic Progress*, London, 1940, p. 83.

18. J. Russell Smith, *op. cit.*, p. 811.

future as in the recent past, that the volume of industrial output relative to population is going to increase slowly if at all during the decades that lie immediately ahead of us. During the last four decades, in one country after another, manufacturing output has come to increase less rapidly than the population. If we leave out of the count the production of war materials, not likely to help in raising the standard of living, the volume of manufactured goods relative to population stopped increasing in Europe some thirty years ago. In the United States the change came later. Up to 1929 the output of manufactured goods had been increasing for generations much more rapidly than the inhabitants of the country. But between 1929 and 1937 it increased only three per cent while population increased six per cent. From 1937 until the outbreak of the war there was an actual decline in the production of manufactured goods. In spite of the efforts made during the thirties to increase the purchasing power of the poorer classes and thus raise the standards of consumption, the volume of output of manufactured goods per person is no longer going up even in the richest of all countries.

What brought about the tremendous increase in markets during the past four or five centuries was not only the growth in the population of Western European extraction. It was also the penetration by Europeans of all parts of the world, civilized as well as backward, together with the growth in the number and variety of material wants among all classes of society. If the increase in markets is to proceed again at anything like the same rate as in the nineteenth century, it can only be by a further penetration of Western European, particularly American and British, material standards of consumption beyond Europe and America, as well by an enormous further increase in the material wants of the Western peoples.

As a wise colleague has said, it is indispensable for an effective missionary to believe in the gospel that he preaches. If the Western nations are to carry bathtubs into the tropics, where natural bathing is often easy, if they are to spread air-conditioned villages and towns in Africa, India and Central and South America, they must persuade hosts of men and women, who possess a different scale of values, of the advantages of an existence to which they are not accustomed and which they would not seek on their own account. The history of the past forty years does not suggest that the Americans are filled with effective cru-

sading zeal on behalf of a high standard of living for backward peoples. The Germans and possibly the Japanese seem willing and eager to govern these backward peoples, but there is little reason to suppose they have a great interest in filling the homes of natives with the commodities that bring with them "the general goodness of life for good people."

In all probability the heroic period of expanding industrial output is over. Whether we look at natural resources or at markets, we are led to the conclusion that after five centuries of more or less continuous increase in the rate of industrial expansion, we are entering an age in which the rate of industrial expansion is almost certain to diminish. The chances are that in the decades which lie ahead of us the volume of industrial output among the Western nations will increase very much more slowly than during the nineteenth century. The hope of the Western peoples lies in the recognition that the end of an epoch marked by a continual increase in the rate of expansion in physical production is inevitable and in many ways desirable, that human needs are not fulfilled merely by the satisfaction of men's physical wants, by the increase in wealth and in life expectancy. The hope of the Western peoples lies in the recognition that their riches and their health have been purchased in recent years at an increasingly heavy price in intelligence, in the sense of individual responsibility and in the general love of mankind. Has not the time come to redress the balance?

(To be continued)