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WHAT IS PROGRESS?¹

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EVER since man disengaged himself from nature and began to reflect upon his place in the Universe, men's minds have been occupied with the question whether the human race as a whole is advancing, and towards what possible future. When first we catch sight of the subject in literature, the idea prevails that mankind had fallen back from an earlier state in which his life was simpler, easier, and more innocent. Hesiod describes his own iron age as below the level of the heroic age, and of the bronze and golden ages which had preceded it. The same idea recurs at intervals through Greek and Roman literature. You all remember the splendor which Virgil threw round it, suggesting, however, a series of successive periods of retrogression and improvement which reminds one of those gigantic cycles in which Eastern thought makes mankind move and of which we catch an echo in the Norse mythology.

With Christianity, a new element of hope was introduced, and during some centuries the notion of a Golden Age was transferred from a heathen past, a world lying in wickedness, to that better time in the future when the New Religion should have overspread and transformed the whole world, and created on it a Kingdom of Heaven. Presently, however, the clouds began again to gather, as the old civilization dissolved and ignorance settled down on Europe. During the Dark Ages, and indeed down to the middle or end of the fourteenth century, men looked

regretfully back to a time when Christendom had been more peaceful and better ordered than they saw it, and when knowledge, wisdom, and the power of literary creation stood on a level far higher than their own.

The Renaissance and the discovery of America changed all this. Hope revived as knowledge and learning revived, and the strong races spread themselves out, conquering and to conquer. Within the last century the belief in human progress has become almost an article of faith. Many causes have gone to this. The rapid growth of population, the establishment of free governments, by which many old evils due to tyranny or the ascendancy of a class have been removed, and, above all, the unprecedentedly swift march of scientific discovery, bringing with it a mastery over nature heretofore undreamed of, have filled men with a confidence that they are going to be not only far more numerous than ever before, but also stronger, freer, happier, and altogether better off than they were at any moment in the past. The Darwinian doctrine of advance through the survival of the fittest (whereof more anon) is deemed to have given a scientific basis for the belief, and our fuller knowledge of primitive man, as he was many thousands of years ago, suggests that a movement which has brought us so far up from the Stone Age must be a continuous movement. That touching confidence in the power of freedom and equality to produce fraternity and universal goodwill, which inspired Frenchmen in the days of the Revolution and was preached by Jefferson to your

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forefathers, has no doubt been frequently set back and discouraged by events. But the persuasion that either an equal division of property, or the extinction of private property and the placing of all the means of production and distribution in the hands of the whole community, will remove the ingrained evils of society, and make everybody happy, has many adherents in all civilized countries, and is indeed a potent factor in practical politics as well as in economic thought.

It would take too long to analyze the causes which have from time to time changed the attitude of the human mind upon this supreme question. All we need to remember is this, that though the so-called law of progress is now commonly held to be axiomatic, there have been many alternations of opinion in the past. The pessimists are for the moment a dispirited minority. But their chance may come again in the future; and the main issue is not so free from doubt as to disentitle them to a fair hearing.

It may be thought that there is one cause powerfully operative to create a belief in the progress of the race, which ought here to be specially mentioned. Pious minds who are filled with reverence for an overruling Providence, and other minds, not so pious, whose loss of faith in a future life has made them concentrate their interest on the development of humanity on the planet it occupies, have by different roads brought themselves, altogether irrespective of facts, to the same belief that all things either have been ordered, or are of themselves working, for the best in this present world, the best of all possible worlds. Thus a philosophy of history has arisen, which insists on regarding all events as tending by a constant law, almost like a law of nature, to bring good out of evil and a higher good out of a lower good.

In this view all the calamities and catastrophes of history are the means by which some blessing otherwise unattainable has been secured. The Norman Con-

quest, which brought misery on England for a century, was needed in order to reinvigorate the Saxon stock and bring into a backward country the more advanced civilization of the continent. The French Revolution and the Napoleonic Wars, great as was the suffering they directly involved, were needed to break down the old régime and the relics of feudalism in Europe. The African slave trade gave the millions of negroes who were sent under hatches to the New World the opportunity of hearing the truths of Christianity. It may be admitted that there never was any evil which was not attended by a certain amount of good. Even a paroxysm of toothache provides an opportunity for the exercise of fortitude and self-control. But in many cases the good will seem to an unbiased mind to have been much less than the evil. The extinction of the Ostro-Gothic nation in Italy, and the taking of Constantinople by the Turks, and the rise of the Inquisition in Spain, come pretty near to being unqualified calamities. This faith in progress based on the doctrine that all things are for the best has no scientific character. It is a mere *a priori* assumption. Hornets and rattlesnakes may have their use and value in the general scheme of things, but why suppose that nature could not have got on equally well without venomous creatures? Whoever desires to examine fairly the question, whether the course of human history is really onward and upward, must rid himself of all these optimistic fancies and be content to take the facts as he finds them. The intrusion of a theory of final causes is as unprofitable and, indeed, misleading, in the interpretation of history as Bacon long ago pointed out that it was barren in philosophy.

I will not venture to-day to examine into this general law of progress, that is, to inquire whether Man is advancing at that steady and constant pace which entitles us to hope that he will some day become, if not a perfect being, yet one incomparably nearer to perfection than he is to-day. That would be indeed an arduous

and intricate inquiry. What I propose is the humbler and more limited investigation of the meaning and contents of the idea of Progress itself, and of the relations of each kind of Progress to other kinds. When we say that man has advanced or is advancing, of what lines of advance are we thinking? The lines of movement are really as numerous as are the aspects of man's nature and the activities which he puts forth. Taking his physical structure, is mankind as a whole becoming stronger, healthier, less injured by habits which depress nervous or muscular force, and are the better stocks of man increasing faster than the inferior stocks? Considered as an acquisitive being, has man more of the things that make for comfort, more food and clothing, better dwellings, more leisure? Intellectually regarded, has he a higher intelligence, more knowledge and opportunities for acquiring knowledge, more creative capacity, more perception of beauty and susceptibility to æsthetic pleasures? Considered in his social relations, has he more personal freedom, is he less exposed to political oppression, has he fuller security for life and property, is there more or less order and concord within each community, more or less peace between nations? Lastly, is man improving as a moral being? Is there more virtue in the world, more sense of justice, more sympathy, kindness, tenderness, more of a disposition to regard the feelings and interests of others and to deal gently with the weak? In each and all of these departments there may be progress, but not necessarily the same rate of progress; and we can perfectly well imagine a progress in some points only, accompanied by a stagnation or even a decline in other points.

When we talk of the progress of the world, do we mean an advance in all these respects, or only in some, and if so, in which of them? If in all of them, which are the most typical and the most significant? Suppose there has been an advance in some, and in others stagnation or retrogression, how shall we determine

which are the most important, the most fraught with promise or discouragement? An examination of the language of popular writers indicates that the current conception has been seldom analyzed. Such writers would seem to have assumed that an improvement in some aspects of human life means an improvement in all, perhaps even an improvement to something like the same extent. Another question suggests itself. Is the so-called Law of Progress a constant one? Supposing its action in the past to have been proved, can we count upon its continuing in the future, or may the causes to which its action has been due sometime or other come to an end? I pass over other points that might be raised. It is enough to have shown in how vague a sense the current term has been used.

There seem to be two ways in which an inquiry into the supposed forward movement of mankind might be conducted. One way is to take Progress in its widest sense as meaning the sum total of human advance in all its forms, and to examine each form in succession. The other way is to select some few of those forms, in which it is comparatively easy to determine whether there has been an advance, and to measure the amount of such advance, and then to see whether the result in those cases can be made a basis for general conclusions as regards other forms. It may be that progress in some directions can be shown to be fairly typical of the general movement of humanity. It may be that such progress involves, or at any rate raises a strong presumption of, other kinds of advance.

Let us take two comparatively easy lines of inquiry: the physical characteristics of the human species, and the conditions under which the species has to live; and let us see what conclusions can be reached by examining these.

Additions to the number of the human race are popularly treated as if they were an undoubted benefit. We see every nation and every community within a nation, down to a village just planted on a

prairie, regarding its own increase as something to be proud of. The eagerness with which cities watch each successive census return for a record of their population is familiar, and nowhere so familiar as in this country. But is the increase of the race any gain to the race? The population of Europe is probably three or four times, that of North America probably twenty times, as large as it was two centuries ago. This proves that there is much more food available for the support of life, much more production of all sorts of commodities, and in particular an immense increase in the area of land used for producing food, with an improvement in the methods of extracting food from the land. So the growth of a city like Boston or Chicago proves that there has been an immense increase in industry. Men work harder, or at any rate more efficiently, and have far more appliances for production at their command. Whether they lead happier lives is another matter. It used to be said that he who made two ears of corn grow where only one ear had grown before was a benefactor to the race. Is that necessarily so? The number of men who can live off the soil is larger, but the men need not be better off. If there is more food there are also more mouths. Their lives may be just as hard, their enjoyments just as limited. Some parts of the earth are already too crowded for comfort. I find many persons rejoicing to think that the use of the power in the falls of Niagara will enable industries to be established there which will treble the population of the surrounding country. The Falls may be gone, but the pool into which they used to plunge will have become the centre of a smoky city. The notion that population is *per se* a benefit and a mark of progress seems to be largely a survival from the ages when each tribe or city needed all the arms it could maintain, to wield sword and spear against its enemies.

"As arrows in the hands of a giant, even so are the young children," says

the Psalmist; and when men were needed to fight against Hittites and Hivites, this was a natural reflection.

It may also be partly due to an unthinking association between growth and prosperity, created by the fact that the establishment of new industries in a community usually brings wealth as well as population. There are people heedless enough to be pleased at hearing that our greatest cities are adding many tens of thousands a year to their inhabitants, as if it were not already a grave problem how to arrest the growth of these huge centres of population, and divert industries to smaller places.

Let us pass from mere numbers to quality. The most remarkable feature of the last few centuries has been the relatively more rapid growth of those whom we call the more advanced races, such as the Teutonic, Celtic, and Slavonic. Nineteen centuries ago there may have been less, perhaps much less, than ten millions of persons on the globe belonging to these three races. There are now probably over three hundred and fifty millions, while the so-called backward races, though some of them increase, have increased more slowly and are now everywhere under the control of the more advanced races. (I do not include in this comparison either the Chinese or the Japanese, the cases of both being peculiar.) This fact represents an undoubted advance.

The question follows: Are these higher stocks (Italo-Iberic, Teutonic, Celtic, Slavonic), wherever found, themselves improving in physical and intellectual quality? This is a very important part of the inquiry. An improvement in this direction would give ground for expecting progress in other directions also.

In duration of life there is (at least in Western Europe and in the United States) unquestionably an improvement. Whether the average of muscular strength is also increasing it may be more hard to say, but certainly it does not seem to be declining.

Through advances in surgical and medical science, more and more diseases are found to be preventable, while more and more of those which used to be thought incurable are shown to be capable of treatment, so that the average of health rises with that of the duration of life. One drawback, however, is serious enough to be specially mentioned. Lunacy is increasing in all countries which keep a statistical record of mental maladies, and the increase is too large to be explained merely by the fact that records are now more accurate. Unless this fact can be accounted for by the abuse of intoxicants, an abuse which seems to be rather decreasing than increasing, it is ominous, because it seems to imply that there are factors in modern life which tend to breed disorders in the brain. But we have not sufficient data for positive conclusions. In this connection a still more serious question arises.

The law of differentiation and improvement by means of natural selection, and the survival of the fittest, which, according to the Darwinian theory, has been a principal cause in the production of more and more perfect types of animal life, may reasonably be thought to have continued to work during the earlier period of the history of mankind. The races which have survived and multiplied and have come to dominate the earth have been the stronger races; and while strife lasted there was always a tendency for physical strength and intelligence to go on increasing. The upper class in every community — and this was equally true of Germany and France in the thirteenth century, and of the Hawaiians when Captain Cook found them — were physically stronger and handsomer than the classes at the bottom of the social scale. The birth rate was probably higher among these aristocratic sections, and the chance of the survival of infants also better. But in modern society the case is quite otherwise. The richer and more educated class marry later and as a rule have smaller families than the poorer class, whose

physique is generally weaker and whose intelligence is generally, though of course not universally, on a somewhat lower level. This is especially the case in great cities, and great cities contain a rapidly increasing proportion of the whole population of every country. The phenomenon seems to be widespread. It is conspicuous in Australia and in your own Eastern States. The result is that the class in which physical strength and a cultivated intelligence are hereditary increases more slowly, if it increases at all, than do the classes inferior in these qualities. Fortunately, the lines of class distinction are much less sharply drawn than they were some centuries ago. The upper class is always being recruited by persons of energy and intellect from the poorer classes. Still, we have here a new cause which may tend to depress the average level of human capacity, though it may be some time before the results have become apparent.

The improvement, so far as attained, in the physical quality of the civilized part of mankind is largely due to such changes in its environment as the greater abundance of food and clothing, the better conditions of housing, the diffusion of property through all classes of the community. Along these lines the improvement has been extraordinary. The luxury of the rich, the comfort of the middle classes, the comparative immunity of the poorer classes from famine and pestilence, have increased within the last two centuries more than they had done during many preceding centuries. Most remarkable of all has been the cause of these improvements, namely, the increase in our knowledge of natural laws and the power over natural forces which has been thereby acquired. Man has now, by comprehending Nature, become her master. These are the things which are commonly in our mind when we talk of Progress. It is the wonderful gains made in those things which are visible and tangible and which affect our daily life at every turn that have struck the popular mind and

have been taken to mark, not only a long onward step, but the certainty of further advance. Material progress has seemed in its triumphant march to sweep everything else along with it. Whether this be really so, is the very question we have to consider. Does our increased knowledge and command of nature, do all those benefits and comforts which that mastery of nature has secured, so greatly facilitate intellectual and moral progress that we may safely assume that there will be an increase in intelligence, in virtue, and in all that is covered by the word Happiness. It seems hard not to believe that, with the world so much more at man's disposal, man is destined to be a being altogether superior to what he has been in the past. Material progress seems to us moderns, when it has gone so far in the course of another century or two that everybody shall have all the comforts and all the opportunities for enjoyment that he can desire, to constitute that Golden Age for which mankind have so often sighed. It is a comparatively new conception of the Golden Age. Those happier days to which Hesiod and Virgil looked back were primarily days of innocence and simplicity, when there was no crime, no violence, no strife.

Needum enim audierant inflari classica, necdum

Impositos duris crepitare inaudibus enses.

The Golden Age to which men's eyes turned back in the centuries of mediæval darkness was primarily an age of enlightenment and learning, an age when the Church had not yet become corrupted by the pursuit of wealth and power. The ideals of both the ancients and the men of the Middle Ages were ethical or intellectual. In neither case did their imagination dwell upon the things which applied science is giving us in such ample measure. This, however, is a digression. Let us return to consider how far the increase of wealth and comfort and opportunities for enjoyment, and of that sway of natural forces which promises more of such opportunities, betokens a like improvement

in political institutions, a like progress in the intellectual development of man and in the delights of living.

Of political institutions I will not attempt to speak to-day. The subject is too large; and one would have to qualify nearly every general statement by reference to particular countries. It is better to confine our present inquiry to the relation of material progress to intelligence and character.

We see under these new conditions less anxiety, less occupation with the hard necessities of finding food and clothing. Work itself is less laborious, because more largely done by machinery and not by mere strength. There is more leisure which can be used for the acquisition of knowledge and for setting thought free to play upon subjects other than practical. The opportunities for obtaining knowledge have been so extended and cheapened that in all civilized countries the elements of instruction can be obtained practically without cost, and higher instruction at a low price by all who are fitted to profit by it. Not only are books within every one's reach, but the daily instructors of the public proffer it at a trifling cost at least as much information as it can assimilate. Transportation has become easy and swift and cheap, so that every one's mind can be enriched and refreshed and stimulated by foreign travel. The dweller in great cities is no doubt more shut out from nature than were his forefathers, but on the other hand he has greater facilities for visiting spots of natural beauty and drawing pleasure from them. Works of art are produced more abundantly, and galleries are accessible in which those of the highest merit can be seen. That a large number of persons are engaged either in producing or in distributing objects believed to possess artistic merit would seem calculated to diffuse widely an appreciation of art and beauty. It may be further suggested that the mere increase of population and of purchasing power has a favoring influence upon intellect, because there is more demand for

the products of intellect and more persons employed in their production.

Thus, whether or no material progress involves and implies intellectual progress, it is clear that it provides unprecedented facilities and opportunities.

When we turn to examine the results, we shall find that the quantity of intellectual activity has enormously increased, increased even faster than the population, by so much as a larger proportion of the population has been raised out of a dull and sluggish brain life. The amount of reading, writing, and of what may be called formal talking, that is, speech-making, preaching, and lecturing, that goes on in all civilized countries, rapidly increases. Thomas Carlyle would have said that much of it could just as well be produced by those whom he described as "chattering Dead Sea apes;" nevertheless a great deal does represent the increased exertion of intellectual power. Think of the quantity of talent that goes into the investigation of natural phenomena by the thousands of researchers now at work, of all the ingenuity expended by lawyers, financiers and others in the contrivance of new methods of carrying on business by combinations, new devices for evading statutes, new ways of placing the capital of the many at the disposal of the few. Quality, however, must be considered as well as quantity. Plato hinted, though to be sure he put the hint into the mouth of an Egyptian sage, that the invention of writing had weakened the powers of the human mind. Without going so far, we may well doubt whether the intellectual excellence of an age can be measured by the number of speeches or the amount of printed matter it produces, and whether the incessant reading of newspapers and magazines tends on the whole to strengthen the faculty of thinking.

Remembering that our own minds have grown by and along with the acquisition of knowledge, we are apt to fancy that an increase of knowledge in the community must mean an increase in in-

tellectual vigor. Undoubtedly every boy in a Boston school to-day knows many things which the wisest man did not know five centuries ago; and the total number of items of information he possesses with regard to man in the past or to nature in the present may be far larger. But that tells us very little about the capacity of the schoolboy.

If we look simply at the facts of history we shall be struck by the impossibility of connecting the power and productiveness of the human intellect with any such external conditions of wealth, comfort, and opportunities for knowledge as we have been considering. The forms which intellectual activity takes, the lines of inquiry which it follows, the sorts of production it values and enjoys, do indeed differ from age to age and do bear a relation to the conditions of man's environment. Material progress has affected these forms and lines. But there is no evidence that it has done more to strengthen than to depress the intensity and originality and creative energy of intellect itself; nor have those qualities shown themselves more abundant as the population of the earth has increased. It does not seem possible, if we go back to the earliest literature which survives to us from Western Asia and Southeastern Europe, to say that the creative powers of the human mind in such subjects as poetry, philosophy, and historical narrative or portraiture, have either improved or deteriorated. The poetry of the early Hebrews and of the early Greeks has never been surpassed and hardly ever equaled. Neither has the philosophy of Plato and Aristotle, nor the speeches of Demosthenes and Cicero. Geniuses like Dante, Chaucer, and Shakespeare appear without our being able to account for them, and for aught we know another may appear at any moment. It is just as difficult, if we look back five centuries, to assert either progress or decline in painting. Sculpture has never again risen to so high a level as it touched in the fifth century, B. C., nor within the last three centuries to so high a

level as it reached at the end of the fifteenth. But we can find no generalizations upon that fact. Music is the most inscrutable of the arts, and whether there is any progress to be expected other than that which may come from a further improvement in instruments constituting an orchestra, I will not attempt to conjecture, any more than I should dare to raise controversy by inquiring whether Beethoven represents progress from Mozart, Wagner progress from Beethoven.

On the whole, therefore, we may conclude that, although material progress furnishes new and varied opportunities for the acquisition of knowledge and for the use of intelligence upon an always increasing mass of facts, and although intelligence is thus enabled to accomplish more in certain directions than it was previously able to do, intellectual power itself in its higher creative forms has not grown stronger. The advance of modern science makes no more probable the appearance of an Archimedes, or an Isaac Newton, or a Leibnitz. What is stranger, there is no larger supply of Leibnizes or Newtons in Europe, which has more than doubled its population since their time. But the chance is increased that a man of great natural gifts may have an opportunity of obtaining the instruction and the opportunities of rising which will enable him to turn those gifts to full account. And it may be added that every generation adds something to the methods which previous generations have bequeathed to it. Such inventions as those of logarithms, of the differential calculus, of the microscope, and of spectrum analysis, place instruments in the hand of the scientific inquirer by which he can effect more. Critical methods in history, which men of exceptional genius like Thucydides were able to use, by dint of their own genius, have now become familiar and can be employed by persons of good average talent. Even in metaphysics, which is often taunted with being the least progressive of the higher branches of analytic or constructive thought, al-

though there is no sign that we have come nearer an explanation of the ultimate riddles, still the accumulation of new technical terms and categories and ways of approaching the main problems does represent a certain advance, albeit the power of abstract thought may not itself have become greater.

May there not be a limit to this kind of advance and may we not be approaching that limit? We cannot tell. Critical methods in philology and history are perhaps not susceptible of much further improvement; but as respects physical science, those who are entitled to speak say that they see stretching before them an infinite vista of discovery.

A larger and a still more intricate question arises. If it has proved difficult to say how far material progress and the extension and diffusion of knowledge have stimulated and are likely to stimulate intellectual progress, still harder is it to estimate their influence on the standard of moral excellence.

What is Moral Progress? The ancient philosophers — let us say the Stoics from Chrysippus to Epictetus — would have described its aim as being Harmony with Nature, that is, with those tendencies in man which lead him to his highest good by raising him above sense-temptations, making him love what is righteous, and find his highest joy in following it.

St. Augustine and St. Thomas of Aquinum would have placed it in conformity to God's Will, to which all thoughts and passions should be so attuned as to accept patiently and trustfully whatever He sends and to seek every occasion of glorifying and serving Him. Neither of these ideals has any relation to material progress, and both philosophers and saints would probably have thought such progress rather hurtful than helpful to the soul.

To estimate the degree in which some sins or vices have declined and others have developed, the extent to which some virtues have grown more common and others more rare, to calculate the

respective ethical values of the qualities in which there has been an improvement and a decline, and to strike a general balance after appraising the worth of all these assets,—this is a task on which few would care to enter. No analysis and no synthesis could make much of data so uncertain in quantity and so disputable in quality. Who will even assert that the love of truth and the courage to deliver the truth, a virtue which lies at the root of many other virtues, has grown stronger or more common. Socrates and some of his contemporaries were conspicuous examples of it. So were Darwin and Pasteur and your own Emerson. But among the contemporaries of Socrates there were Sophists, and the class is fully represented in our time also. Besides, the data are always changing. Human emotion, like the creative intelligence, finds from time to time one channel more easy to follow or more attractive than another. So different virtues rise and fall, bloom and wither, as they inspire joy or command admiration.

It may, however, be suggested that there is one thing whose relation to material progress must somehow be determined, seeing that it has always been deemed (so far as this life is concerned) the ultimate aim of all desire and effort, the ultimate test of every kind of advance. It is Happiness.

What is Happiness? Is it Pleasure? And if so, what is Pleasure? Aristotle gave a definition of Pleasure—or rather perhaps a description, for the logicians say that you cannot define a *summum genus*—which has not been much improved upon. It is not, however, psychological definitions that need concern us, but rather that question which occupied the English Utilitarian School seventy years ago: whether all the pleasures, taken in the aggregate as constituting Happiness, are to be subjected to a qualitative as well as a quantitative analysis. Shall we measure them by the intensity by which they are felt or by the fineness and elevation of the feeling to which they appeal? Is the

satisfaction which Pericles felt in watching the performance of a drama of Sophocles at an Athenian festival greater or less than the satisfaction which one of his slaves felt in draining a jar of wine?

The principle of the greatest happiness of the greatest number, which in the hands of Jeremy Bentham seemed capable of being practically applied to the more tangible and vulgar pleasures, became so sublimated and evanescent when applied by J. S. Mill to those moral sentiments which afford a pure and exquisite delight to persons capable of feeling them, as to lose its original value as a test of laws and institutions. Yet any attempt to reckon up pleasures as a whole must take account of both kinds.

Other questions may be raised which show the intricacy of the subject. Every addition to the sum of pleasures may bring some pain with it, for the enjoyment of each pleasure creates a desire to have more of it. Where new conditions have enabled men to acquire a taste for something, the want of it is felt as a deprivation which may become a hardship. So the new contrivances science has given to save our time and trouble have their drawbacks. Does the telephone add more to the convenience of life than it takes away from its repose? May not the very facility wherewith pleasures heretofore precious, because rare, are now attainable, induce a sort of satiety, and dull the edge of enjoyment? May not our feverish activity be followed by a period of lassitude? Such speculations might be pursued *ad infinitum*. Let us cut them short by saying that while it may be hard to measure Happiness itself, it is clear that the bettering of the external conditions of life has vastly reduced mechanical toil and vastly increased the opportunity of enjoying some pleasures, such as those which art and music furnish. Think of the facilities for travel. The delight in natural scenery, if not an absolutely novel pleasure, is at any rate enjoyed in a more constant way and by a

far larger number of persons than formerly. Quick and cheap transportation have made it incomparably more easy of enjoyment. Add to this the fact that many old sources of misery have been reduced. The use of anæsthetics has diminished suffering as well as prolonged life. Torture has been abolished in civilized countries. Prisoners are treated less harshly, though it may be doubted whether the result desired might not be equally well obtained with shorter sentences, for certainty is more effective than severity. Cruelty, though always liable to break out afresh when exceptional conditions rouse passion or race-hatred, is more and more condemned by public opinion. There is a far stronger sense that it is every one's duty, and ought to be every one's pleasure, to help others, and to smooth their path for the unfortunate. Timid or sensitive children have less to fear. Women have at any rate a far better legal protection against wrong, though we may well believe that they always fared far better than the harshness of the old laws would seem to imply. For most men, three fourths of the happiness or misery of life spring out of the domestic relations. Were it not for the increase of divorce, we should be disposed to hold that those relations stand now on a better footing than they ever did before.

All these isolated facts, however, do not solve the main problem. Neither does the comparison of our own age with preceding ages. Most of us probably rejoice that we did not live in the fifth or the tenth or even in the seventeenth century of the Christian era. When we think of those times we see their dark side and we feel how much we should miss in which we now take pleasure. But can we be sure that the individual man in those past centuries had on the average a worse time than the average man has now? He was in many points less sensitive to suffering than we are, and he may have enjoyed some things more intensely. The literature of the seven centuries that preceded our own is in many ways quite as buoy-

ant in spirit as our own. It is often thought that the fear of torment in a future life must have brooded like a dark cloud over the minds of past generations, and that the tendency of opinion which has attenuated this fear represents a great brightening in the sky. Lucretius held that the greatest service ever rendered to mankind was that rendered by Epicurus, when he dispelled those mists of ancient superstition which had produced human sacrifice. Other mists settled down not so long after the days of Lucretius; and, in direct violation of the teaching it professed to respect, superstition caused far more bloodshed and suffering after his time than it had ever caused before. Persecution has now vanished, and with it the terrors to which superstition appealed.

On the other hand, we all know many persons who look back to what they call the Ages of Faith as ages in which man's mind was far more full of peace and hope than it is in times when so many doubt what guide they shall follow. These are only a few of the questions that may be asked when we compare past and present; and no one can answer them.

Shall we take Happiness in its broadest sense — the sense in which it applies to every man, whether capable of the higher pleasures or only of the lower ones — to mean that general sense of contentment and satisfaction which makes life seem to have been and to be worth living? The test of human progress towards happiness would then be, — Does the average man to-day, at the end of each year or at the end of his life, feel more inclined than the average man would have done two hundred or four hundred or six hundred years ago, to say that he would like to live the same life over again, because his pleasures in it have on the whole exceeded his pains?

May we not suspect that this is a matter which depends less on the possession of any external goods, of comfort and of opportunities for pleasure, than it does

upon the human temperament itself? Thus the central point of the inquiry would be, — Are the physical causes and the moral causes which mould and color the human temperament making it more or less placid, cheerful, and serene? This is largely a question for the physiologist, who stands upon somewhat firmer ground than does the moralist. Some physiologists tell us that the conditions of modern life in the most highly civilized communities create a strain upon the nervous system which makes people fretful, capricious, restless, or perhaps despondent. They point to the increase of lunacy, to the increase of divorce, and to the increase of suicide as evidencing the results of this nervous strain. These ominous symptoms will not appear to most of us to outweigh the general impression we have that the sum of enjoyment and cheerfulness is slightly greater now than it was a century ago, or even in our own boyhood. Still, they are symptoms to be noted, and the fact that science puts its finger on phenomena in modern life which are new and which may, if they go on increasing, affect the physical and moral constitution of man, suggests the reflection that we may still have much to learn upon the subject. All the phenomena which belong to modern city life under severe and constant pressure are comparatively new. They may work prejudicially on the human organism. On the other hand the organism may adapt itself to them, may escape physical mischief, and reap mental benefit. A century's experience will help us to judge better.

As I said at the outset, I have not invited you to deal with the main question as to whether there really exists a general law of human progress. Instead of making a front attack on the centre of the position we have been content to execute a sort of skirmishing reconnaissance all round it, and have followed devious paths in trying to ascertain where it can best be assailed, beating up a good many pickets by the way. My aim has been to define

the problem, to examine the conditions that surround it, and thereby to clarify our own conception of the idea of Progress. Let me sum up the conclusions which we have reached.

The question whether there is a general law of human progress is a complicated one, because there are so many different lines along which advance may be made.

A philosophical conception of Progress must include all these lines and must endeavor to determine their relative significance.

The popular conception of Progress, and that which rises first to our minds, is of an increase in wealth, in comfort, in means of attaining knowledge, and all those forms in which an increased command of the forces of nature enables us to apply them for the service of men.

An advance in these things, the sum of which we may roughly call Material Progress, is easy to determine, and is in fact evident. Political progress is also evident, though it is subject to some deductions and to many reserves.

Progress in other things, including intellectual power and moral excellence, is far more difficult to determine. There is, however, an immense increase in knowledge and in the means of acquiring further knowledge, especially the knowledge of nature.

Many ways can be indicated in which material progress and the increase of knowledge may be expected to promote intellectual and moral improvement, but the time that has elapsed since that progress became rapid is hardly sufficient to enable us to say how far or how soon these results will follow. Material progress may create expectations of happiness which cannot, so far as we see, be realized. Thus an Age of Progress might be an Age of Discontent.

The broad general question, whether the sum of human happiness has increased and is increasing, is the most difficult of all to treat scientifically.

Happiness is so largely a matter of temperament, and temperament so largely

depends on physiological conditions, and the physiological conditions of life may be so much affected by economic and social changes now passing in the world, that it may be necessary to wait for some considerable time before attempting to determine whether the excitement and variety of modern life make for happiness.

We are really not so much better placed than were the ancients and the men of the Renaissance for solving these great problems. We do indeed know what they, who were nearer to the time, did not know, that there never was a Golden Age in the past. They guessed that the earth will one day cease to be habitable. Some of our scientific lights have suggested modes in which this may happen, possibly by immersion in the sun, possibly by the

exhaustion of our stock of oxygen. But the contingency is so doubtful, and in any event so distant, that it need not affect any such chances of perfectibility as man may enjoy.

We may seem to be better equipped for prophecy than they were, because we have come to know all the surface of the earth, and its resources, and the races that dwell thereon, and their respective gifts and capacities. But how these elements will combine and work together is a problem apparently as inscrutable as ever.

The bark that carries Man and his fortunes traverses an ocean where the winds are variable and the currents unknown. He can do little to direct its course, and the mists that shroud the horizon hang as thick and low as they did when the voyage began.

TENDENCIES OF AMERICAN RAILROAD DEVELOPMENT

BY RAY MORRIS

THE early history of the Baltimore & Ohio and Pennsylvania railroads serves as witness that the economic value of interior communications was early appreciated by the commonwealths; the building, later, of the first western lines testifies that the national government realized the strategic importance of tying the Pacific States to the region of the country already within reach of Washington. Yet, a decade after the government had given the Northern Pacific forty-eight million acres of land as a direct aid and incentive to the builders, and had allowed the Central Pacific and Union Pacific what may be described as a subsidy of some twenty-five thousand dollars a mile, together with a land grant of over thirty million acres, Wisconsin enacted the Potter Law (1874), fixing

rates within the state on a basis on which the railroads could not do business and pay their fixed charges. The original Interstate Commerce Act, amended and amplified last year, was passed in 1887, the Sherman Anti-Trust Act in 1890; and now, in 1907, state governments east and west are vying with one another in the enactment of restrictive railroad regulation.

Five critical periods in the history of railroads in the United States are indicated in this brief summary, and may be designated, respectively, as the periods of state aid, of national aid, of Granger hostility, of national restriction, and of general state hostility.

Between the building of the Union Pacific Railroad and the passage of the Anti-Trust Act and the Interstate Com-