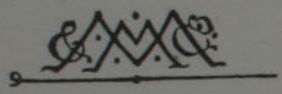
THE IDEA OF PROGRESS



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TORONTO

THE IDEA OF PROGRESS

AN INQUIRY INTO ITS ORIGIN AND GROWTH

BY

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to the memories of

Charles François Castel de Saint-Pierre,

Marie Jean Antoine Nicolas Caritat de Condorcet,

Auguste Comte,

Herbert Spencer,

and other optimists mentioned in this volume.

Tantane uos generis tenuit fiducia uestri ?

PREFACE

We may believe in the doctrine of Progress or we may not, but in either case it is a matter of interest to examine the origins and trace the history of what is now, even should it ultimately prove to be no more than an *idolum saeculi*, the animating and controlling idea of western civilisation. For the earthly Progress of humanity is the general test to which social aims and theories are submitted as a matter of course. The phrase *civilisation and progress* has become stereotyped, and illustrates how we have come to judge a civilisation good or bad according as it is or is not progressive. The ideals of liberty and democracy, which have their own ancient and independent justifications, have sought a new strength by attaching themselves to Progress. The conjunctions of "liberty and progress," "democracy and progress," meet us at every turn. Socialism, at an early stage of its modern development, sought the same aid. The friends of Mars, who cannot bear the prospect of perpetual peace, maintain that war is an indispensable instrument

of Progress. It is in the name of Progress that the doctrinaires who established the present reign of terror in Russia profess to act. All this shows the prevalent feeling that a social or political theory or programme is hardly tenable if it cannot claim that it harmonises with this controlling idea.

In the Middle Ages Europeans followed a different guiding star. The idea of a life beyond the grave was in control, and the great things of this life were conducted with reference to the next. When men's deepest feelings reacted more steadily and powerfully to the idea of saving their souls than to any other, harmony with this idea was the test by which the opportuneness of social theories and institutions was judged. Monasticism, for instance, throve under its aegis, while liberty of conscience had no chance. With a new idea in control, this has been reversed. Religious freedom has thriven under the aegis of Progress; monasticism can make no appeal to it.

For the hope of an ultimate happy state on this planet to be enjoyed by future generations—or of some state, at least, that may relatively be considered happy—has replaced, as a social power, the hope of felicity in another world. Belief in personal immortality is still very widely entertained, but may we not fairly say that it has ceased to be a central and guiding idea of collective life, a

criterion by which social values are measured? Many people do not believe in it; many more regard it as so uncertain that they could not reasonably permit it to affect their lives or opinions. Those who believe in it are doubtless the majority, but belief has many degrees; and one can hardly be wrong in saying that, as a general rule, this belief does not possess the imaginations of those who hold it, that their emotions react to it feebly, that it is felt to be remote and unreal, and has comparatively seldom a more direct influence on conduct than the abstract arguments to be found in treatises on morals.

Under the control of the idea of Progress the ethical code recognised in the Western world has been reformed in modern times by a new principle of far-reaching importance which has emanated from that idea. When Isocrates formulated the rule of life, "Do unto others," he probably did not mean to include among "others" slaves or savages. The Stoics and the Christians extended its application to the whole of living humanity. But in late years the rule has received a vastly greater extension by the inclusion of the unborn generations of the future. This principle of duty to posterity is a direct corollary of the idea of Progress. In the recent war that idea, involving the moral obligation of making sacrifices for the sake of future

ages, was constantly appealed to; just as in the Crusades, the most characteristic wars of our medieval ancestors, the idea of human destinies then in the ascendant lured thousands to hardship and death.

The present attempt to trace the genesis and growth of the idea in broad outline is a purely historical inquiry, and any discussion of the great issue which is involved lies outside its modest scope. Occasional criticisms on particular forms which the creed of Progress assumed, or on arguments which were used to support it, are not intended as a judgment on its general validity. I may, however, make two observations here. The doubts which Mr. Balfour expressed nearly thirty years ago, in an Address delivered at Glasgow, have not, so far as I know, been answered. And it is probable that many people, to whom six years ago the notion of a sudden decline or break-up of our western civilisation, as a result not of cosmic forces but of its own development, would have appeared almost fantastic, will feel much less confident to-day, notwithstanding the fact that the leading nations of the world have instituted a league of peoples for the prevention of war, the measure to which so many high priests of Progress have looked forward as meaning a long stride forward on the road to Utopia.

The preponderance of France's part in develop-

ing the idea is an outstanding feature of its history. France, who, like ancient Greece, has always been a nursing-mother of ideas, bears the principal responsibility for its growth; and if it is French thought that will persistently claim our attention, this is not due to an arbitrary preference on my part or to neglect of speculation in other countries.

J. B. BURY.

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INTRODUCTION

When we say that ideas rule the world, or exercise a decisive power in history, we are generally thinking of those ideas which express human aims and depend for their realisation on the human will, such as liberty, toleration, equality of opportunity, socialism. Some of these have been partly realised, and there is no reason why any of them should not be fully realised, in a society or in the world, if it were the united purpose of a society or of the world to realise it. They are approved or condemned because they are held to be good or bad, not because they are true or false. But there is another order of ideas that play a great part in determining and directing the course of man's conduct but do not depend on his will—ideas which bear upon the mystery of life, such as Fate, Providence, or personal immortality. Such ideas may operate in important ways on the forms of social action, but they involve a question of fact and they are accepted or rejected not because they are believed to be useful or injurious, but because they are believed to be true or false.

The idea of the progress of humanity is an idea of this kind, and it is important to be quite clear on the point. We now take it so much for granted,

we are so conscious of constantly progressing in knowledge, arts, organising capacity, utilities of all sorts, that it is easy to look upon Progress as an aim, like liberty or a world-federation, which it only depends on our own efforts and good-will to achieve. But though all increases of power and knowledge depend on human effort, the idea of the Progress of humanity, from which all these particular progresses derive their value, raises a definite question of fact, which man's wishes or labours cannot affect any more than his wishes or labours can prolong life beyond the grave.

This idea means that civilisation has moved, is moving, and will move in a desirable direction. But in order to judge that we are moving in a desirable direction we should have to know precisely what the destination is. To the minds of most people the desirable outcome of human development would be a condition of society in which all the inhabitants of the planet would enjoy a perfectly happy existence. But it is impossible to be sure that civilisation is moving in the right direction to realise this aim. Certain features of our "progress" may be urged as presumptions in its favour, but there are always offsets, and it has always been easy to make out a case that, from the point of view of increasing happiness, the tendencies of our progressive civilisation are far from desirable. In short, it cannot be proved that the unknown destination towards which man is advancing is desirable. The movement may be Progress, or it may be in an undesirable direction and therefore not Progress. This is a question of fact, and one which is at present as insoluble as the question of

personal immortality. It is a problem which bears on the mystery of life.

Moreover, even if it is admitted to be probable that the course of civilisation has so far been in a desirable direction, and such as would lead to general felicity if the direction were followed far enough, it cannot be proved that ultimate attainment depends entirely on the human will. For the advance might at some point be arrested by an insuperable wall. Take the particular case of knowledge, as to which it is generally taken for granted that the continuity of progress in the future depends altogether on the continuity of human effort (assuming that human brains do not degenerate). This assumption is based on a strictly limited experience. Science has been advancing without interruption during the last three or four hundred years; every new discovery has led to new problems and new methods of solution, and opened up new fields for exploration. Hitherto men of science have not been compelled to halt, they have always found means to advance further. But what assurance have we that they will not one day come up against impassable barriers? The experience of four hundred years, in which the surface of nature has been successfully tapped, can hardly be said to warrant conclusions as to the prospect of operations extending over four hundred or four thousand centuries. Take biology or astronomy. How can we be sure that some day progress may not come to a dead pause, not because knowledge is exhausted, but because our resources for investigation are exhausted—because, for instance, scientific instruments have reached the limit of perfection

beyond which it is demonstrably impossible to improve them, or because (in the case of astronomy) we come into the presence of forces of which, unlike gravitation, we have no terrestrial experience? It is an assumption, which cannot be verified, that we shall not soon reach a point in our knowledge of nature beyond which the human intellect is unqualified to pass.

But it is just this assumption which is the light and inspiration of man's scientific research. For if the assumption is not true, it means that he can never come within sight of the goal which is, in the case of physical science, if not a complete knowledge of the cosmos and the processes of nature, at least an immeasurably larger and deeper knowledge than we at present possess.

Thus continuous progress in man's knowledge of his environment, which is one of the chief conditions of general Progress, is a hypothesis which may or may not be true. And if it is true, there remains the further hypothesis of man's moral and social "perfectibility," which rests on much less impressive evidence. There is nothing to show that he may not reach, in his psychical and social development, a stage at which the conditions of his life will be still far from satisfactory, and beyond which he will find it impossible to progress. This is a question of fact which no willing on man's part can alter. It is a question bearing on the mystery of life.

Enough has been said to show that the Progress of humanity belongs to the same order of ideas as Providence or personal immortality. It is true or it is false, and like them it cannot be proved either true or false. Belief in it is an act of faith.

The idea of human Progress then is a theory which involves a synthesis of the past and a prophecy of the future. It is based on an interpretation of history which regards men as slowly advancing—*pedetemtim progredientes*—in a definite and desirable direction, and infers that this progress will continue indefinitely. And it implies that, as

> The issue of the earth's great business,

a condition of general happiness will ultimately be enjoyed, which will justify the whole process of civilisation; for otherwise the direction would not be desirable. There is also a further implication. The process must be the necessary outcome of the psychical and social nature of man; it must not be at the mercy of any external will; otherwise there would be no guarantee of its continuance and its issue, and the idea of Progress would lapse into the idea of Providence.

As time is the very condition of the possibility of Progress, it is obvious that the idea would be valueless if there were any cogent reasons for supposing that the time at the disposal of humanity is likely to reach a limit in the near future. If there were good cause for believing that the earth would be uninhabitable in A.D. 2000 or 2100 the doctrine of Progress would lose its meaning and would automatically disappear. It would be a delicate question to decide what is the minimum period of time which must be assured to man for his future development, in order that Progress should possess value and appeal to the emotions. The recorded history of civilisation covers 6000 years or so, and

if we take this as a measure of our conceptions of time-distances, we might assume that if we were sure of a period ten times as long ahead of us the idea of Progress would not lose its power of appeal. Sixty thousand years of *historical* time, when we survey the changes which have come to pass in six thousand, opens to the imagination a range vast enough to seem almost endless.

This psychological question, however, need not be decided. For science assures us that the stability of the present conditions of the solar system is certified for many myriads of years to come. Whatever gradual modifications of climate there may be, the planet will not cease to support life for a period which transcends and flouts all efforts of imagination. In short, the *possibility* of Progress is guaranteed by the high probability, based on astro-physical science, of an immense time to progress in.

It may surprise many to be told that the notion of Progress, which now seems so easy to apprehend, is of comparatively recent origin. It has indeed been claimed that various thinkers, both ancient (for instance, Seneca) and medieval (for instance, Friar Bacon), had long ago conceived it. But sporadic observations—such as man's gradual rise from primitive and savage conditions to a certain level of civilisation by a series of inventions, or the possibility of some future additions to his knowledge of nature—which were inevitable at a certain stage of human reflection, do not amount to an anticipation of the idea. The value of such observations was determined, and must be estimated, by the whole context of ideas in which they occurred. It is from its bearings on the future that Progress derives its

value, its interest, and its power. You may conceive civilisation as having gradually advanced in the past, but you have not got the idea of Progress until you go on to conceive that it is destined to advance indefinitely in the future. Ideas have their intellectual climates, and I propose to show briefly in this Introduction that the intellectual climates of classical antiquity and the ensuing ages were not propitious to the birth of the doctrine of Progress. It is not till the sixteenth century that the obstacles to its appearance definitely begin to be transcended and a favourable atmosphere to be gradually prepared.

I

It may, in particular, seem surprising that the Greeks, who were so fertile in their speculations on human life, did not hit upon an idea which seems so simple and obvious to us as the idea of Progress. But if we try to realise their experience and the general character of their thought we shall cease to wonder. Their recorded history did not go back far, and so far as it did go there had been no impressive series of new discoveries suggesting either an indefinite increase of knowledge or a growing mastery of the forces of nature. In the period in which their most brilliant minds were busied with the problems of the universe men might improve the building of ships, or invent new geometrical demonstrations, but their science did little or nothing to transform the conditions of life or to open any vista into the future. They were

in the presence of no facts strong enough to counteract that profound veneration of antiquity which seems natural to mankind, and the Athenians of the age of Pericles or of Plato, though they were thoroughly, obviously "modern" compared with the Homeric Greeks, were never self-consciously "modern" as we are.

I

The indications that human civilisation was a gradual growth, and that man had painfully worked his way forward from a low and savage state, could not, indeed, escape the sharp vision of the Greeks. For instance, Aeschylus represents men as originally living at hazard in sunless caves, and raised from that condition by Prometheus, who taught them the arts of life. In Euripides we find a similar recognition of the ascent of mankind to a civilised state, from primitive barbarism, some god or other playing the part of Prometheus. In such passages as these we have, it may be said, the idea that man has progressed; and it may fairly be suggested that belief in a natural progress lay, for Aeschylus as well as for Euripides, behind the poetical fiction of supernatural intervention. But these recognitions of a progress were not incompatible with the widely-spread belief in an initial degeneration of the human race; nor did it usually appear as a rival doctrine. The old legend of a "golden age" of simplicity, from which man had fallen away, was generally accepted as truth, and leading thinkers combined it with the doctrine of a gradual sequence of social and material improve-

ments[1] during the subsequent period of decline. We find the two views thus combined, for instance, in Plato's *Laws*, and in the earliest reasoned history of civilisation written by Dicaearchus, a pupil of Aristotle.[2] But the simple life of the first age, in which men were not worn with toil, and war and disease were unknown, was regarded as the ideal state to which man would be only too fortunate if he could return. He had indeed at a remote time in the past succeeded in ameliorating some of the conditions of his lot, but such ancient discoveries as fire or ploughing or navigation or law-giving did not suggest the guess that new inventions might lead ultimately to conditions in which life would be more complex but as happy as the simple life of the primitive world.

But, if some relative progress might be admitted, the general view of Greek philosophers was that they were living in a period of inevitable degeneration and decay—inevitable because it was prescribed by the nature of the universe. We have only an imperfect knowledge of the influential speculations of Heraclitus, Pythagoras, and Empedocles, but we may take Plato's tentative philosophy of history to illustrate the trend and the prejudices of Greek thought on this subject. The world was created and set going by the Deity, and, as his work, it was perfect; but it was not immortal and had in it

[1] In the masterly survey of early Greek history which Thucydides prefixed to his work, he traces the social progress of the Greeks in historical times, and finds the key to it in the increase of wealth.

[2] Aristotle's own view is not very clear. He thinks that all arts, sciences, and institutions have been repeatedly, or rather an infinite number of times (ἀπειράκις) discovered in the past and again lost. *Metaphysics*, xi. 8 *ad fin.*; *Politics*, iv. 10, cp. ii. 2. An infinite number of times seems to imply the doctrine of cycles.

the seeds of decay. The period of its duration is 72,000 solar years. During the first half of this period the original uniformity and order, which were impressed upon it by the Creator, are maintained under his guidance; but then it reaches a point from which it begins, as it were, to roll back; the Deity has loosened his grip of the machine, the order is disturbed, and the second 36,000 years are a period of gradual decay and degeneration. At the end of this time, the world left to itself would dissolve into chaos, but the Deity again seizes the helm and restores the original conditions, and the whole process begins anew. The first half of such a world-cycle corresponds to the Golden Age of legend in which men lived happily and simply; we have now unfortunately reached some point in the period of decadence.

Plato applies the theory of degradation in his study of political communities. He conceives his own utopian aristocracy as having existed somewhere towards the beginning of the period of the world's relapse, when things were not so bad,[1] and exhibits its gradual deterioration, through the successive stages of timocracy, oligarchy, democracy, and despotism. He explains this deterioration as primarily caused by a degeneration of the race, due to laxity and errors in the State regulation of marriages, and the consequent birth of biologically inferior individuals.

The theories of Plato are only the most illustrious

[1] Similarly he places the ideal society which he describes in the *Critias* 9000 years before Solon. The state which he plans in the *Laws* is indeed imagined as a practicable project in his own day, but then it is only a second-best. The ideal state of which Aristotle sketched an outline (*Politics*, iv. v.) is not set either in time or in place.

example of the tendency characteristic of Greek philosophical thinkers to idealise the immutable as possessing a higher value than that which varies. This affected all their social speculations. They believed in the ideal of an absolute order in society, from which, when it is once established, any deviation must be for the worse. Aristotle, considering the subject from a practical point of view, laid down that changes in an established social order are undesirable, and should be as few and slight as possible.[1] This prejudice against change excluded the apprehension of civilisation as a progressive movement. It did not occur to Plato or any one else that a perfect order might be attainable by a long series of changes and adaptations. Such an order, being an embodiment of reason, could be created only by a deliberate and immediate act of a planning mind. It might be devised by the wisdom of a philosopher or revealed by the Deity. Hence the salvation of a community must lie in preserving intact, so far as possible, the institutions imposed by the enlightened lawgiver, since change meant corruption and disaster. These *a priori* principles account for the admiration of the Spartan state entertained by many Greek philosophers, because it was supposed to have preserved unchanged for an unusually long period a system established by an inspired legislator.

2

Thus time was regarded as the enemy of humanity. Horace's verse,

Damnosa quid non imminuit dies?

[1] *Politics*, ii. 5.

"time depreciates the value of the world," expresses the pessimistic axiom accepted in most systems of ancient thought.

The theory of world-cycles was so widely current that it may almost be described as the orthodox theory of cosmic time among the Greeks, and it passed from them to the Romans. According to some of the Pythagoreans each cycle repeated to the minutest particular the course and events of the preceding. If the universe dissolves into the original chaos, there appeared to them to be no reason why the second chaos should produce a world differing in the least respect from its predecessor. The n^{th} cycle would be indeed numerically distinct from the first, but otherwise would be identical with it, and no man could possibly discover the number of the cycle in which he was living. As no end seems to have been assigned to the whole process, the course of the world's history would contain an endless number of Trojan Wars, for instance; an endless number of Platos would write an endless number of *Republics*. Virgil uses this idea in his Fourth Eclogue, where he meditates a return of the Golden Age:

> Alter erit tum Tiphys, et altera quae uehat Argo
> Delectos heroas; erunt etiam altera bella,
> Atque iterum ad Troiam magnus mittetur Achilles.

The periodic theory might be held in forms in which this uncanny doctrine of absolute identity was avoided; but at the best it meant an endless monotonous iteration, which was singularly unlikely to stimulate speculative interest in the future. It must be remembered that no thinker had any means of knowing how near to the end of his cycle

the present hour might be. The most influential school of the later Greek age, the Stoics, adopted the theory of cycles, and the natural psychological effect of the theory is vividly reflected in Marcus Aurelius, who frequently dwells on it in his *Meditations*. "The rational soul," he says, "wanders round the whole world and through the encompassing void, and gazes into infinite time, and considers the periodic destructions and rebirths of the universe, and reflects that our posterity will see nothing new, and that our ancestors saw nothing greater than we have seen. A man of forty years, possessing the most moderate intelligence, may be said to have seen all that is past and all that is to come; so uniform is the world."[1]

3

And yet one Stoic philosopher saw clearly, and declared emphatically, that increases in knowledge must be expected in the future.

"There are many peoples to-day," Seneca wrote, "who are ignorant of the cause of eclipses of the moon, and it has only recently been demonstrated among ourselves. The day will come when time and human diligence will clear up problems which are now obscure. We divide the few years of our lives unequally between study and vice, and it will therefore be the work of many generations to explain such phenomena as comets. One day our posterity will marvel at our ignorance of causes so clear to them.

[1] xi. 1. The cyclical theory was curiously revived in the nineteenth century by Nietzsche, and it is interesting to note his avowal that it took him a long time to overcome the feeling of pessimism which the doctrine inspired.

"How many new animals have we first come to know in the present age? In time to come men will know much that is unknown to us. Many discoveries are reserved for future ages, when our memory will have faded from men's minds. We imagine ourselves initiated in the secrets of nature; we are standing on the threshold of her temple."

But these predictions are far from showing that Seneca had the least inkling of a doctrine of the Progress of humanity. Such a doctrine is sharply excluded by the principles of his philosophy and his profoundly pessimistic view of human affairs. Immediately after the passage which I have quoted he goes on to enlarge on the progress of vice. "Are you surprised to be told that human knowledge has not yet completed its whole task? Why, human wickedness has not yet fully developed."

Yet, at least, it may be said, Seneca believed in a progress of knowledge and recognised its value. Yes, but the value which he attributed to it did not lie in any advantages which it would bring to the general community of mankind. He did not expect from it any improvement of the world. The value of natural science, from his point of view, was this, that it opened to the philosopher a divine region, in which, "wandering among the stars," he could laugh at the earth and all its riches, and his mind "delivered as it were from prison could return to its original home." In other words, its value lay not in its results, but simply in the intellectual activity; and therefore it concerned not mankind at large but a few chosen individuals who, doomed to live in a miserable world, could thus deliver their souls from slavery.

For Seneca's belief in the theory of degeneration and the hopeless corruption of the race is uncompromising. Human life on the earth is periodically destroyed, alternately by fire and flood; and each period begins with a golden age in which men live in rude simplicity, innocent because they are ignorant not because they are wise. When they degenerate from this state, arts and inventions promote deterioration by ministering to luxury and vice.

Interesting, then, as Seneca's observations on the prospect of some future scientific discoveries are, and they are unique in ancient literature,[1] they were far from adumbrating a doctrine of the Progress of man. For him, as for Plato and the older philosophers, time is the enemy of man.

4

There was however a school of philosophical speculation, which might have led to the foundation of a theory of Progress, if the historical outlook of the Greeks had been larger and if their temper had been different. The Atomic theory of Democritus seems to us now, in many ways, the most wonderful achievement of Greek thought, but it had a small range of influence in Greece, and would have had less if it had not convinced the brilliant mind of Epicurus. The Epicureans developed it, and it may be that the views which they put forward as to the history of the human race are mainly their own superstructure. These philosophers rejected

[1] They are general and definite. This distinguishes them, for instance, from Plato's incidental hint in the *Republic* as to the prospect of the future development of solid geometry.

entirely the doctrine of a Golden Age and a subsequent degeneration, which was manifestly incompatible with their theory that the world was mechanically formed from atoms without the intervention of a Deity. For them, the earliest condition of men resembled that of the beasts, and from this primitive and miserable condition they laboriously reached the existing state of civilisation, not by external guidance or as a consequence of some initial design, but simply by the exercise of human intelligence throughout a long period.[1] The gradual amelioration of their existence was marked by the discovery of fire and the use of metals, the invention of language, the invention of weaving, the growth of arts and industries, navigation, the development of family life, the establishment of social order by means of kings, magistrates, laws, the foundation of cities. The last great step in the amelioration of life, according to Lucretius, was the illuminating philosophy of Epicurus, who dispelled the fear of invisible powers and guided man from intellectual darkness to light.

But Lucretius and the school to which he belonged did not look forward to a steady and continuous process of further amelioration in the future. They believed that a time would come when the universe would fall into ruins,[2] but the intervening period did not interest them. Like

[1] Lucretius v. 1448 *sqq.* (where the word *progress* is pronounced):

> Usus et impigrae simul experientia mentis
> Paulatim docuit pedetemtim *progredientis*.
> Sic unum quicquid paulatim protrahit aetas
> In medium ratioque in luminis erigit oras.
> Namque alid ex alio clarescere et ordine debet
> Artibus, ad summum donec uenere cacumen.

[2] *Ib.* 95.

many other philosophers, they thought that their own philosophy was the final word on the universe, and they did not contemplate the possibility that important advances in knowledge might be achieved by subsequent generations. And, in any case, their scope was entirely individualistic; all their speculations were subsidiary to the aim of rendering the life of the individual as tolerable as possible here and now. Their philosophy, like Stoicism, was a philosophy of resignation; it was thoroughly pessimistic and therefore incompatible with the idea of Progress. Lucretius himself allows an underlying feeling of scepticism as to the value of civilisation occasionally to escape.[1]

Indeed, it might be said that in the mentality of the ancient Greeks there was a strain which would have rendered them indisposed to take such an idea seriously, if it had been propounded. No period of their history could be described as an age of optimism. They were never, by their achievements in art or literature, in mathematics or philosophy, exalted into self-complacency or lured into setting high hopes on human capacity. Man has resourcefulness to meet everything—*ἄπορος ἐπ' οὐδὲν ἔρχεται*, —they did not go further than that.

This instinctive pessimism of the Greeks had a religious tinge which perhaps even the Epicureans found it hard entirely to expunge. They always felt that they were in the presence of unknown incalculable powers, and that subtle dangers lurked in human achievements and gains. Horace has taken this feeling as the *motif* of a criticism on

[1] His *eadem sunt omnia semper* (iii. 945) is the constant refrain of Marcus Aurelius.

man's inventive powers. A voyage of Virgil suggests the reflection that his friend's life would not be exposed to hazards on the high seas if the art of navigation had never been discovered—if man had submissively respected the limits imposed by nature. But man is audacious :

Nequiquam deus abscidit
Prudens oceano dissociabili
Terras.
In vain a wise god sever'd lands
By the dissociating sea.

Daedalus violated the air, as Hercules invaded hell. The discovery of fire put us in possession of a forbidden secret. Is this unnatural conquest of nature safe or wise? *Nil mortalibus ardui est* :

Man finds no feat too hard or high ;
Heaven is not safe from man's desire.
Our rash designs move Jove to ire,
He dares not lay his thunder by.

The thought of this ode[1] roughly expresses what would have been the instinctive sense of thoughtful Greeks if the idea of Progress had been presented to them. It would have struck them as audacious, the theory of men unduly elated and perilously at ease in the presence of unknown incalculable powers.

This feeling or attitude was connected with the idea of Moira. If we were to name any single idea as generally controlling or pervading Greek thought from Homer to the Stoics,[2] it would perhaps be Moira, for which we have no equivalent. The

[1] i. 3.
[2] The Stoics identified Moira with *Pronoia*, in accordance with their theory that the universe is permeated by thought.

common rendering "fate" is misleading. Moira meant a fixed order in the universe; but as a fact to which men must bow, it had enough in common with fatality to demand a philosophy of resignation and to hinder the creation of an optimistic atmosphere of hope. It was this order which kept things in their places, assigned to each its proper sphere and function, and drew a definite line, for instance, between men and gods. Human progress towards perfection—towards an ideal of omniscience, or an ideal of happiness, would have been a breaking down of the bars which divide the human from the divine. Human nature does not alter; it is fixed by Moira.

5

We can see now how it was that speculative Greek minds never hit on the idea of Progress. In the first place, their limited historical experience did not easily suggest such a synthesis; and in the second place, the axioms of their thought, their suspiciousness of change, their theories of Moira, of degeneration and cycles, suggested a view of the world which was the very antithesis of progressive development. Epicurean philosophers made indeed what might have been an important step in the direction of the doctrine of Progress, by discarding the theory of degeneration, and recognising that civilisation had been created by a series of successive improvements achieved by the effort of man alone. But here they stopped short. For they had their eyes fixed on the lot of the individual here and now, and their study of the history of humanity was strictly subordinate to this personal

interest. The value of their recognition of human progress in the past is conditioned by the general tenor and purpose of their theory of life. It was simply one item in their demonstration that man owed nothing to supernatural intervention and had nothing to fear from supernatural powers. It is however no accident that the school of thought which struck on a path that might have led to the idea of Progress was the most uncompromising enemy of superstition that Greece produced.

It might be thought that the establishment of Roman rule and order in a large part of the known world, and the civilising of barbarian peoples, could not fail to have opened to the imagination of some of those who reflected on it in the days of Virgil or of Seneca, a vista into the future. But there was no change in the conditions of life likely to suggest a brighter view of human existence. With the loss of freedom pessimism increased, and the Greek philosophies of resignation were needed more than ever. Those whom they could not satisfy turned their thoughts to new mystical philosophies and religions, which were little interested in the earthly destinies of human society.

II

1

The idea of the universe which prevailed throughout the Middle Ages, and the general orientation of men's thoughts were incompatible with some of the fundamental assumptions which are required by

the idea of Progress. According to the Christian theory which was worked out by the Fathers, and especially by St. Augustine, the whole movement of history has the purpose of securing the happiness of a small portion of the human race in another world; it does not postulate a further development of human history on earth. For Augustine, as for any medieval believer, the course of history would be satisfactorily complete if the world came to an end in his own lifetime. He was not interested in the question whether any gradual amelioration of society or increase of knowledge would mark the period of time which might still remain to run before the day of Judgment. In Augustine's system the Christian era introduced the last period of history, the old age of humanity, which would endure only so long as to enable the Deity to gather in the predestined number of saved people. This theory might be combined with the widely-spread belief in a millennium on earth, but the conception of such a dispensation does not render it a theory of Progress.

Again, the medieval doctrine apprehends history not as a natural development but as a series of events ordered by divine intervention and revelations. If humanity had been left to go its own way it would have drifted to a highly undesirable port, and all men would have incurred the fate of everlasting misery from which supernatural interference rescued the minority. A belief in Providence might indeed, and in a future age would, be held along with a belief in Progress, in the same mind; but the fundamental assumptions were incongruous, and so long as the doctrine of

Providence was undisputedly in the ascendant, a doctrine of Progress could not arise. And the doctrine of Providence, as it was developed in Augustine's *City of God*, controlled the thought of the Middle Ages.

There was, moreover, the doctrine of original sin, an insuperable obstacle to the moral amelioration of the race by any gradual process of development. For since, so long as the human species endures on earth, every child will be born naturally evil and worthy of punishment, a moral advance of humanity to perfection is plainly impossible.

2

But there are certain features in the medieval theory of which we must not ignore the significance. In the first place, while it maintained the belief in degeneration, endorsed by Hebrew mythology, it definitely abandoned the Greek theory of cycles. The history of the earth was recognised as a unique phenomenon in time; it would never occur again, or anything resembling it. More important than all is the fact that Christian theology constructed a synthesis which for the first time attempted to give a definite meaning to the whole course of human events, a synthesis which represents the past as leading up to a definite and desirable goal in the future. Once this belief had been generally adopted and prevailed for centuries men might discard it along with the doctrine of Providence on which it rested, but they could not be content to return again to such views as satisfied the ancients, for whom human history, apprehended as a whole,

was a tale of little meaning.[1] They must seek for some new synthesis to replace it.

Another feature of the medieval theory, pertinent to our inquiry, was an idea which Christianity took over from Greek and Roman thinkers. In the later period of Greek history, which began with the conquests of Alexander the Great, there had emerged the conception of the whole inhabited world as a unity and totality, the idea of the whole human race as one. We may conveniently call it the ecumenical idea—the principle of the *ecumene* or inhabited world, as opposed to the principle of the *polis* or city. Promoted by the vast extension of the geographical limits of the Greek world resulting from Alexander's conquests, and by his policy of breaking down the barriers between Greek and barbarian, the idea was reflected in the Stoic doctrine that all men are brothers, and that a man's true country is not his own particular city, but the *ecumene*.[2] It soon became familiar, popularised by the most popular of the later philosophies of Greece; and just as it had been implied in the imperial aspiration and polity of Alexander, so it was implied, still more clearly, in the imperial theory of Rome. The idea of the

[1] It may be observed that Augustine (*De Civ. Dei*, x. 14) compares the teaching (*recta eruditio*) of the people of God, in the gradual process of history, to the education of an individual. Prudentius has a similar comparison for a different purpose (*c. Symmachum*, ii. 315 *sqq.*):

> Tardis semper processibus aucta
> Crescit vita hominis et longo proficit usu.
> Sic aevi mortalis habet se mobilis ordo,
> Sic variat natura vices, infantia repit, etc.

Florus (*Epitome, ad init.*) had already divided Roman history into four periods corresponding to infancy, adolescence, manhood, and old age.

[2] Plutarch long ago saw the connection between the policy of Alexander and the cosmopolitan teaching of Zeno. *De Alexandri Magni virtute*, i. § 6.

Roman Empire, its theoretical justification, might be described as the realisation of the unity of the world by the establishment of a common order, the unification of mankind in a single world-embracing political organism. The term "world," *orbis* (*terrarum*), which imperial poets use freely in speaking of the Empire, is more than a mere poetical or patriotic exaggeration; it expresses the idea, the unrealised ideal of the Empire. There is a stone from Halicarnassus in the British Museum, on which the idea is formally expressed from another point of view. The inscription is of the time of Augustus, and the Emperor is designated as "saviour of the community of mankind." There we have the notion of the human race apprehended as a whole, the ecumenical idea, imposing upon Rome the task described by Virgil as *regere imperio populos*, and more humanely by Pliny as the creation of a single fatherland for all the peoples of the world.

This idea, which in the Roman Empire and in the Middle Ages took the form of a universal State and a universal Church, passed afterwards into the conception of the intercohesion of peoples as contributors to a common pool of civilisation — a principle which, when the idea of Progress at last made its appearance in the world, was to be one of the elements in its growth.

3

One remarkable man, the Franciscan friar Roger Bacon,[1] who stands on an isolated pinnacle of his

[1] *c.* A.D. 1210–92.

own in the Middle Ages, deserves particular consideration. It has been claimed for him that he announced the idea of Progress; he has even been compared to Condorcet or Comte. Such claims are based on passages taken out of their context and indulgently interpreted in the light of later theories. They are not borne out by an examination of his general conception of the universe and the aim of his writings.

His aim was to reform higher education and introduce into the universities a wide, liberal, and scientific programme of secular studies. His chief work, the *Opus Majus*, was written for this purpose, to which his exposition of his own discoveries was subordinate. It was addressed and sent to Pope Clement IV., who had asked Bacon to give him an account of his researches, and was designed to persuade the Pontiff of the utility of science from an ecclesiastical point of view, and to induce him to sanction an intellectual reform, which without the approbation of the Church would at that time have been impossible. With great ingenuity and resourcefulness he sought to show that the studies to which he was devoted—mathematics, astronomy, physics, chemistry—were indispensable to an intelligent study of theology and Scripture. Though some of his arguments may have been urged simply to capture the Pope's good-will, there can be no question that Bacon was absolutely sincere in his view that theology was the mistress (*dominatrix*) of the sciences and that their supreme value lay in being necessary to it.

It was, indeed, on this principle of the close interconnection of all branches of knowledge that

Bacon based his plea and his scheme of reform. And the idea of the "solidarity" of the sciences, in which he anticipated a later age, is one of his two chief claims to be remembered. It is the motif of the *Opus Majus*, and it would have been more fully elaborated if he had lived to complete the encyclopaedic work, *Scriptum Principale*, which he had only begun before his death. His other title to fame is well-known. He realised, as no man had done before him, the importance of the experimental method in investigating the secrets of nature, and was an almost solitary pioneer in the paths to which his greater namesake, more than three hundred years later, was to invite the attention of the world.

But, although Roger Bacon was inspired by these enlightened ideas, although he cast off many of the prejudices of his time and boldly revolted against the tyranny of the prevailing scholastic philosophy, he was nevertheless in other respects a child of his age and could not disencumber himself of the current medieval conception of the universe. His general view of the course of human history was not materially different from that of St. Augustine. When he says that the practical object of all knowledge is to assure the safety of the human race, he explains this to mean "things which lead to felicity in the next life."

It is pertinent to observe that he not only shared in the belief in astrology, which was then universal, but considered it one of the most important parts of "mathematics." It was looked upon with disfavour by the Church as a dangerous study; Bacon defended its use in the interests of the Church itself. He maintained, like Thomas Aquinas, the

physiological influence of the celestial bodies, and regarded the planets as signs telling us what God has decreed from eternity to come to pass either by natural processes or by acts of human will or directly at his own good pleasure. Deluges, plagues, and earthquakes were capable of being predicted; political and religious revolutions were set in the starry rubric. The existence of six principal religions was determined by the combinations of Jupiter with the other six planets. Bacon seriously expected the extinction of the Mohammedan religion before the end of the thirteenth century, on the ground of a prediction by an Arab astrologer.

One of the greatest advantages that the study of astrological lore will bring to humanity is that by its means the date of the coming of Anti-Christ may be fixed with certainty, and the Church may be prepared to face the perils and trials of that terrible time. Now the arrival of Anti-Christ meant the end of the world, and Bacon accepted the view, which he says was held by all wise men, that "we are not far from the times of Anti-Christ." Thus the intellectual reforms which he urged would have the effect, and no more, of preparing Christendom to resist more successfully the corruption in which the rule of Anti-Christ would involve the world. "Truth will prevail," by which he meant science will make advances, "though with difficulty, until Anti-Christ and his forerunners appear;" and on his own showing the interval would probably be short.

The frequency with which Bacon recurs to this subject, and the emphasis he lays on it, show that the appearance of Anti-Christ was a fixed point in his mental horizon. When he looked forward

into the future, the vision which confronted him was a scene of corruption, tyranny, and struggle under the reign of a barbarous enemy of Christendom; and after that, the end of the world. It is from this point of view that we must appreciate the observations which he made on the advancement of knowledge. "It is our duty," he says, "to supply what the ancients have left incomplete, because we have entered into their labours, which, unless we are asses, can stimulate us to achieve better results"; Aristotle corrected the errors of earlier thinkers; Avicenna and Averroes have corrected Aristotle in some matters and have added much that is new; and so it will go on till the end of the world. And Bacon quotes passages from Seneca's *Physical Inquiries* to show that the acquisition of knowledge is gradual. Attention has been already called to those passages, and it was shown how perverse it is, on the strength of such remarks, to claim Seneca as a teacher of the doctrine of Progress. The same claim has been made for Bacon with greater confidence, and it is no less perverse. The idea of Progress is glaringly incongruous with his vision of the world. If his programme of revolutionising secular learning had been accepted—it fell completely dead, and his work was forgotten for many ages,—he would have been the author of a progressive reform; but how many reformers have there been before and after Bacon on whose minds the idea of Progress never dawned?

4

Thus Friar Bacon's theories of scientific reform, so far from amounting to an anticipation of the idea

of Progress, illustrate how impossible it was that this idea could appear in the Middle Ages. The whole spirit of medieval Christianity excluded it. The conceptions which were entertained of the working of divine Providence, the belief that the world, surprised like a sleeping household by a thief in the night, might at any moment come to a sudden end, had the same effect as the Greek theories of the nature of change and of recurring cycles of the world. Or rather, they had a more powerful effect, because they were not reasoned conclusions, but dogmas guaranteed by divine authority. And medieval pessimism as to man's mundane condition was darker and sterner than the pessimism of the Greeks. There was the prospect of happiness in another sphere to compensate, but this, engrossing the imagination, only rendered it less likely that any one should think of speculating about man's destinies on earth.

III

1

The civilised countries of Europe spent about three hundred years in passing from the mental atmosphere of the Middle Ages into the mental atmosphere of the modern world. These centuries were one of the conspicuously progressive periods in history, but the conditions were not favourable to the appearance of an idea of Progress, though the intellectual *milieu* was being prepared in which that idea could be born.

This progressive period, which is conveniently called the Renaissance, lasted from the fourteenth into the seventeenth century. The great results, significant for our present purpose, which the human mind achieved at this stage of its development were two. Self-confidence was restored to human reason, and life on this planet was recognised as possessing a value independent of any hopes or fears connected with a life beyond the grave.

But in discarding medieval *naïveté* and superstition, in assuming a freer attitude towards theological authority, and in developing a new conception of the value of individual personality, men looked to the guidance of Greek and Roman thinkers, and called up the spirit of the ancient world to exorcise the ghosts of the dark ages. Their minds were thus directed backwards to a past civilisation which, in the ardour of new discovery, and in the reaction against medievalism, they enthroned as ideal; and a new authority was set up, the authority of ancient writers. In general speculation the men of the Renaissance followed the tendencies and adopted many of the prejudices of Greek philosophy. Although some great discoveries, with far-reaching, revolutionary consequences, were made in this period, most active minds were engaged in rediscovering, elaborating, criticising, and imitating what was old. It was not till the closing years of the Renaissance that speculation began to seek and feel its way towards new points of departure. It was not till then that a serious reaction set in against the deeper influences of medieval thought.

2

To illustrate the limitations of this period let us take Machiavelli, one of the most original thinkers that Italy ever produced.

There are certain fundamental principles underlying Machiavelli's science of politics, which he has indicated incidentally in his unsystematic way, but which are essential to the comprehension of his doctrines. The first is that at all times the world of human beings has been the same, varying indeed from land to land, but always presenting the same aspect of some societies advancing towards prosperity, and others declining. Those which are on the upward grade will always reach a point beyond which they cannot rise further, but they will not remain permanently on this level, they will begin to decline; for human things are always in motion and therefore must go up or down. Similarly, declining states will ultimately touch bottom and then begin to ascend. Thus a good constitution or social organisation can last only for a short time.

It is obvious that in this view of history Machiavelli was inspired and instructed by the ancients. And it followed from his premisses that the study of the past is of the highest value because it enables men to see what is to come; since to all social events at any period there are correspondences in ancient times. "For these events are due to men, who have and always had the same passions, and therefore of necessity the effects must be the same."

Again, Machiavelli follows his ancient masters

in assuming as evident that a good organisation of society can be effected only by the deliberate design of a wise legislator. Forms of government and religions are the personal creations of a single brain; and the only chance for a satisfactory constitution or for a religion to maintain itself for any length of time is constantly to repress any tendencies to depart from the original conceptions of its creator.

It is evident that these two assumptions are logically connected. The lawgiver builds on the immutability of human nature; what is good for one generation must be good for another. For Machiavelli, as for Plato, change meant corruption. Thus his fundamental theory excluded any conception of a satisfactory social order gradually emerging by the impersonal work of successive generations, adapting their institutions to their own changing needs and aspirations. It is characteristic, and another point of resemblance with ancient thinkers, that he sought the ideal state in the past —republican Rome.

These doctrines, the sameness of human nature and the omnipotent lawgiver, left no room for anything resembling a theory of Progress. If not held afterwards in the uncompromising form in which Machiavelli presented them, yet it has well been pointed out that they lay at the root of some of the most famous speculations of the eighteenth century.

3

Machiavelli's sameness of human nature meant that man would always have the same passions and desires, weaknesses and vices. This assumption

was compatible with the widely prevailing view that man had degenerated in the course of the last fifteen hundred years. From the exaltation of Greek and Roman antiquity to a position of unattainable superiority, especially in the field of knowledge, the degeneration of humanity was an easy and natural inference. If the Greeks in philosophy and science were authoritative guides, if in art and literature they were unapproachable, if the Roman republic, as Machiavelli thought, was an ideal state, it would seem that the powers of Nature had declined, and she could no longer produce the same quality of brain. So long as this paralysing theory prevailed, it is manifest that the idea of Progress could not appear.

But in the course of the sixteenth century men began here and there, somewhat timidly and tentatively, to rebel against the tyranny of antiquity, or rather to prepare the way for the open rebellion which was to break out in the seventeenth. Breaches were made in the proud citadel of ancient learning. Copernicus undermined the authority of Ptolemy and his predecessors; the anatomical researches of Vesalius injured the prestige of Galen; and Aristotle was attacked on many sides by men like Telesio, Cardan, Ramus, and Bruno. In particular branches of science an innovation was beginning which heralded a radical revolution in the study of natural phenomena, though the general significance of the prospect which these researches opened was but vaguely understood at the time. The thinkers and men of science were living in an intellectual twilight. It was the twilight of dawn. At one extremity we have

mysticism which culminated in the speculations of Bruno and Campanella; at the other we have the scepticism of Montaigne, Charron, and Sanchez. The bewildered condition of knowledge is indicated by the fact that while Bruno and Campanella accepted the Copernican astronomy, it was rejected by one who in many other respects may claim to be reckoned as a modern—I mean Francis Bacon.

But the growing tendency to challenge the authority of the ancients does not sever this period from the spirit which informed the Renaissance. For it is subordinate or incidental to a more general and important interest. To rehabilitate the natural man, to claim that he should be the pilot of his own course, to assert his freedom in the fields of art and literature had been the work of the early Renaissance. It was the problem of the later Renaissance to complete this emancipation in the sphere of philosophical thought. The bold metaphysics of Bruno, for which he atoned by a fiery death, offered the solution which was most unorthodox and complete. His deification of nature and of man as part of nature involved the liberation of humanity from external authority. But other speculative minds of the age, though less audacious, were equally inspired by the idea of freely interrogating nature, and were all engaged in accomplishing the programme of the Renaissance—the vindication of this world as possessing a value for man independent of its relations to any supermundane sphere. The raptures of Giordano Bruno and the sobrieties of Francis Bacon are here on common ground. The whole movement was a

necessary prelude to a new age of which science was to be the mistress.

It is to be noted that there was a general feeling of complacency as to the condition of learning and intellectual pursuits. This optimism is expressed by Rabelais. Gargantua, in a letter to Pantagruel, studying at Paris, enlarges to his son on the vast improvements in learning and education which had recently, he says, been brought about. "All the world is full of savants, learned teachers, large libraries; and I am of opinion that neither in the time of Plato nor of Cicero nor of Papinian were there such facilities for study as one sees now." It is indeed the study of the ancient languages and literatures that Gargantua considers in a liberal education, but the satisfaction at the present diffusion of learning, with the suggestion that here at least contemporaries have an advantage over the ancients, is the significant point. This satisfaction shines through the observation of Ramus that "in one century we have seen a greater progress in men and works of learning than our ancestors had seen in the whole course of the previous fourteen centuries."[1]

In this last stage of the Renaissance, which includes the first quarter of the seventeenth

[1] Guillaume Postel observed in his *De magistratibus Atheniensium liber* (1541) that the ages are always progressing (*secula semper proficere*), and every day additions are made to human knowledge, and that this process would only cease if Providence by war, or plague, or some catastrophe were to destroy all the accumulated stores of knowledge which have been transmitted from antiquity in books (*Praef.*, B verso). What is known of the life of this almost forgotten scholar has been collected by G. Weill (*De Gulielmi Postelli vita et indole*, 1892). He visited the East, brought back oriental MSS., and was more than once imprisoned on charges of heresy. He dreamed of converting the Mohammedans, and of uniting the whole world under the empire of France.

century, soil was being prepared in which the idea of Progress could germinate, and our history of its origin definitely begins with the work of two men who belong to this age, Bodin, who is hardly known except to special students of political science, and Bacon, who is known to all the world. Both had a more general grasp of the significance of their own time than any of their contemporaries, and though neither of them discovered a theory of Progress, they both made contributions to thought which directly contributed to its subsequent appearance.

CHAPTER I

SOME INTERPRETATIONS OF UNIVERSAL HISTORY: BODIN AND LE ROY

I

It is a long descent from the genius of Machiavelli to the French historian, Jean Bodin, who published his introduction to historical studies[1] about forty years after Machiavelli's death. His views and his method differ widely from those of that great pioneer, whom he attacks. His readers were not arrested by startling novelties or immoral doctrine; he is safe, and dull.

But Bodin had a much wider range of thought than Machiavelli, whose mind was entirely concentrated on the theory of politics; and his importance for us lies not in the political speculations by which he sought to prove that monarchy is the best form of government,[2] but in his attempt to substitute a new theory of universal history for that which prevailed in the Middle Ages. He rejected the popular conception of a golden age and a subsequent degeneration of mankind; and he refuted the view, generally current among medieval theologians, and based on the prophecies

[1] *Methodus ad facilem historiarum cognitionem*, 1566.
[2] *Les six livres de la République*, 1576.

of Daniel, which divided the course of history into four periods corresponding to the Babylonian, Persian, Macedonian, and Roman monarchies, the last of which was to endure till the day of Judgement. Bodin suggests a division into three great periods: the first, of about two thousand years, in which the South-Eastern peoples were predominant; the second, of the same duration, in which those whom he calls the Middle (Mediterranean) peoples came to the front; the third, in which the Northern nations who overthrew Rome became the leaders in civilisation. Each period is stamped by the psychological character of the three racial groups. The note of the first is religion, of the second practical sagacity, of the third warfare and inventive skill. This division actually anticipates the synthesis of Hegel.[1] But the interesting point is that it is based on anthropological considerations, in which climate and geography are taken into account; and, notwithstanding the crudeness of the whole exposition and the intrusion of astrological arguments, it is a new step in the study of universal history.

I have said that Bodin rejected the theory of the degeneration of man, along with the tradition of a previous age of virtue and felicity. The reason which he alleged against it is important. The powers of nature have always been uniform. It is illegitimate to suppose that she could at one time produce the men and conditions postulated by the theory of the golden age, and not produce them at another. In other words, Bodin asserts the

[1] Hegel's division is (1) the Oriental, (2) *a*, the Greek, *b*, the Roman, and (3) the Germanic worlds.

principle of the permanent and undiminishing capacities of nature, and, as we shall see in the sequel, this principle was significant. It is not to be confounded with the doctrine of the immutability of human things assumed by Machiavelli. The human scene has vastly changed since the primitive age of man; "if that so-called golden age could be revoked and compared with our own, we should consider it iron."[1] For history largely depends on the will of men, which is always changing; every day new laws, new customs, new institutions, both secular and religious, come into being, and new errors.[2]

But in this changing scene we can observe a certain regularity, a law of oscillation. Rise is followed by fall, and fall by rise; it is a mistake to think that the human race is always deteriorating.[3] If that were so, we should long ago have reached the lowest stage of vice and iniquity. On the contrary, there has been, through the series of oscillations, a gradual ascent. In the ages which have been foolishly designated as gold and silver men lived like the wild beasts; and from that state they have slowly reached the humanity of manners and the social order which prevail to-day.[4]

Thus Bodin recognises a general progress in the past. That is nothing new; it was the view, for instance, of the Epicureans. But much had passed in the world since the philosophy of

1 *Methodus*, cap. VII. p. 353.

2 *Ib.* cap. I. p. 12.

3 *Ib.* cap. VII. p. 361: "cum aeterna quadam lege naturae conversio rerum omnium velut in orbem redire videatur, ut aeque vitia virtutibus, ignoratio scientiae, turpe honesto consequens sit, atque tenebrae luci, fallunt qui genus hominum semper deterius seipso evadere putant."

4 *Ib.* p. 356.

Epicurus was alive, and Bodin had to consider twelve hundred years of new vicissitudes. Could the Epicurean theory be brought up to date?

2

Bodin deals with the question almost entirely in respect to human knowledge. In definitely denying the degeneration of man, Bodin was only expressing what many thinkers of the sixteenth century had been coming to feel, though timidly and obscurely. The philosophers and men of science, who criticised the ancients in special departments, did not formulate any general view on the privileged position of antiquity. Bodin was the first to do so.

Knowledge, letters, and arts have their vicissitudes, he says; they rise, increase, and flourish, and then languish and die. After the decay of Rome there was a long fallow period; but this was followed by a splendid revival of knowledge and an intellectual productivity which no other age has exceeded. The scientific discoveries of the ancients deserve high praise; but the moderns have not only thrown new light on phenomena which they had incompletely explained, they have made new discoveries of equal or indeed greater importance. Take, for instance, the mariner's compass which has made possible the circumnavigation of the earth and a universal commerce, whereby the world has been changed, as it were, into a single state.[1] Take

[1] Cardan had already signalised the compass, printing, and gunpowder as three modern inventions, to which "the whole of antiquity has nothing equal to show." He adds, "I pass over the other inventions of this age which, though wonderful, form rather a development of ancient arts than surpass the intellects of our ancestors." *De subtilitate*, lib. 3 *ad init.* (*Opera*, iii. p. 609).

the advances we have made in geography and astronomy; the invention of gunpowder; the development of the woollen and other industries. The invention of printing alone can be set against anything that the ancients achieved.[1]

An inference from all this, obvious to a modern reader, would be that in the future there will be similar oscillations, and new inventions and discoveries as remarkable as any that have been made in the past. But Bodin does not draw this inference. He confines himself to the past and present, and has no word to say about the vicissitudes of the future. But he is not haunted by any vision of the end of the world, or the coming of Antichrist; three centuries of humanism lay between him and Roger Bacon.

3

And yet the influence of medievalism, which it had been the work of those three centuries to overcome, was still pervasively there. Still more the authority of the Greeks and Romans, which had been set up by the revival of learning, was, without their realising it, heavy even upon thinkers like Bodin, who did not scruple freely to criticise ancient authors. And so, in his thoughtful attempt to find a clew to universal history, he was hampered by theological and cosmic theories, the legacy of the past. It is significant of the trend of his mind that when he is discussing the periodic decline of science and letters, he suggests that it may be due

[1] *Methodus*, cap. VII., pp. 359-61. Bodin also points out that there was an improvement, in some respects, in manners and morals since the early Roman Empire; for instance, in the abolition of gladiatorial spectacles (p. 359).

to the direct action of God, punishing those who misapplied useful sciences to the destruction of men.

But his speculations were particularly compromised by his belief in astrology, which, notwithstanding the efforts of humanists like Petrarch, Aeneas Sylvius, and Pico to discredit it, retained its hold over the minds of many eminent, otherwise emancipated, thinkers throughout the period of the Renaissance. Here Bodin is in the company of Machiavelli and Lord Bacon. But not content with the doctrine of astral influence on human events, he sought another key to historical changes in the influence of numbers, reviving the ideas of Pythagoras and Plato, but working them out in a way of his own. He enumerates the durations of the lives of many famous men, to show that they can be expressed by powers of 7 and 9, or the product of these numbers. Other numbers which have special virtues are the powers of 12, the perfect number[1] 496, and various others. He gives many examples to prove that these mystic numbers determine the durations of empires and underlie historical chronology. For instance, the duration of the oriental monarchies from Ninus to the Conquest of Persia by Alexander the Great was 1728 ($=12^3$) years. He gives the Roman republic from the foundation of Rome to the battle of Actium 729 ($=9^3$) years.

4

From a believer in such a theory, which illustrates the limitations of men's outlook on the world in the Renaissance period, we could perhaps

[1] *I.e.* a number equal to the sum of all its factors.

hardly expect a vision of Progress. The best that can be said for it is that, both here and in his astrological creed, Bodin is crudely attempting to bring human history into close connection with the rest of the universe, and to establish the view that the whole world is built on a divine plan by which all the parts are intimately interrelated. He is careful, however, to avoid fatalism. He asserts, as we have seen, that history depends largely on the will of men. And he comes nearer to the idea of Progress than any one before him; he is on the threshold.

For if we eliminate his astrological and Pythagorean speculations, and various theological parentheses which do not disturb his argument, his work announces a new view of history which is optimistic regarding man's career on earth, without any reference to his destinies in a future life. And in this optimistic view there are three particular points to note, which were essential to the subsequent growth of the idea of Progress. In the first place, the decisive rejection of the theory of degeneration, which had been a perpetual obstacle to the apprehension of that idea. Secondly, the unreserved claim that his own age was fully equal, and in some respects superior, to the age of classical antiquity, in respect of science and the arts. He leaves the ancients reverently on their pedestal, but he erects another pedestal for the moderns, and it is rather higher. We shall see the import of this when we come to consider the intellectual movement in which the idea of Progress was afterwards to emerge. In the third place, he had a conception of the common interest of all the peoples of the

earth, a conception which corresponded to the old ecumenical idea of the Greeks and Romans,[1] but had now a new significance through the discoveries of modern navigators. He speaks repeatedly of the world as a universal state, and suggests that the various races, by their peculiar aptitudes and qualities, contribute to the common good of the whole. This idea of the "solidarity" of peoples was to be an important element in the growth of the doctrine of Progress.

These ideas were in the air. Another Frenchman, the classical scholar, Louis Le Roy, translator of Plato and Aristotle, put forward similar views in a work of less celebrity, *On the Vicissitude or Variety of the Things in the Universe.*[2] It contains a survey of great periods in which particular peoples attained an exceptional state of dominion and prosperity, and it anticipates later histories of civilisation by dwelling but slightly on political events and bringing into prominence human achievements in science, philosophy, and the arts. Beginning with the advance of man from primitive rudeness to ordered society—a sketch based on the conjectures of Plato in the *Protagoras*—Le Roy reviews the history, and estimates the merits, of the Egyptians, Assyrians and Persians, the Greeks, Romans and Saracens, and finally of the modern age. The facts, he thinks, establish the proposition that the art of warfare, eloquence, philosophy, mathematics, and the fine arts, generally flourish and decline together.

[1] See above, p. 23.

[2] *De la vicissitude ou variété des choses en l'univers*, 1577, 2nd ed. (which I have used), 1584.

But they do decline. Human things are not perpetual; all pass through the same cycle—beginning, progress, perfection, corruption, end. This, however, does not explain the succession of empires in the world, the changes of the scene of prosperity from one people or set of peoples to another. Le Roy finds the cause in providential design. God, he believes, cares for all parts of the universe and has distributed excellence in arms and letters now to Asia, now to Europe, again to Africa, letting virtue and vice, knowledge and ignorance travel from country to country, that all in their turn may share in good and bad fortune, and none become too proud through prolonged prosperity.

But what of the modern age in Western Europe? It is fully the equal, he assevers, of the most illustrious ages of the past, and in some respects it is superior. Almost all the liberal and mechanical arts of antiquity, which had been lost for about 1200 years, have been restored, and there have been new inventions, especially printing, and the mariner's compass, and "I would give the third place to gunnery but that it seems invented rather for the ruin than for the utility of the human race." In our knowledge of astronomy and cosmography we surpass the ancients. "We can affirm that the whole world is now known, and all the races of men; they can interchange all their commodities and mutually supply their needs, as inhabitants of the same city or world-state." And hence there has been a notable increase of wealth.

Vice and suffering, indeed, are as grave as ever, and we are afflicted by the trouble of heresies; but

this does not prove a general deterioration of morals. If that inveterate complaint, the refrain chanted by old men in every age, were true, the world would already have reached the extreme limit of wickedness, and integrity would have disappeared utterly. Seneca long ago made the right criticism. *Hoc maiores nostri questi sunt, hoc nos querimur, hoc posteri nostri querentur, eversos esse mores. . . . At ista stant loco eodem.* Perhaps Le Roy was thinking particularly of that curious book the *Apology for Herodotus*, in which the eminent Greek scholar, Henri Estienne, exposed with Calvinistic prejudice the iniquities of modern times and the corruption of the Roman Church.[1]

But if we are to judge by past experience, does it not follow that this modern age must go the same way as the great ages of the past which it rivals or even surpasses? Our civilisation, too, having reached perfection, will inevitably decline and pass away: is not this the clear lesson of history? Le Roy does not shirk the issue; it is the point to which his whole exposition has led and he puts it vividly.

"If the memory of the past is the instruction of the present and the premonition of the future, it is to be feared that having reached so great excellence, power, wisdom, studies, books, industries will decline, as has happened in the past, and disappear —confusion succeeding to the order and perfection of to-day, rudeness to civilisation, ignorance to knowledge. I already foresee in imagination

[1] *L'Introduction au traité de la conformité des merveilles anciennes avec les modernes, ou traité préparatif à l'Apologie pour Hérodote*, ed. Ristelhuber, 2 vols., 1879. The book was published in 1566.

nations, strange in form, complexion, and costume, overwhelming Europe — like the Goths, Huns, Vandals, Lombards, Saracens of old—destroying our cities and palaces, burning our libraries, devastating all that is beautiful. I foresee in all countries wars, domestic and foreign, factions and heresies which will profane all things human and divine; famines, plagues, and floods; the universe approaching an end, world-wide confusion, and the return of things to their original chaos." [1]

But having conducted us to this pessimistic conclusion Le Roy finds it repugnant, and is unwilling to acquiesce in it. Like an embarrassed dramatist he escapes from the knot which he has tied by introducing the *deus ex machina*.

"However much these things proceed according to the fatal law of the world, and have their natural causes, yet events depend principally on Divine Providence which is superior to nature and alone knows the predetermined times of events." That is to say, it depends, after all, on Providence whether the argument from past experience is valid. Who knows whether the modern age may not prove the exception to the law which has hitherto prevailed? Let us act as if it would.

This is the practical moral that Le Roy enforces in the last book of his dissertation. We must not allow ourselves to be paralysed or dismayed by the destinies of past civilisations, but must work hard to transmit to posterity all that has been achieved, and augment the discoveries of the past by new

[1] It is characteristic of the age that in the last sentence the author goes beyond the issue and contemplates the possibility which still haunted men's minds that the end of the world might not be far off.

researches. For knowledge is inexhaustible. "Let us not be so simple as to believe that the ancients have known and said everything and left nothing to their successors. Or that nature gave them all her favours in order to remain sterile ever after." Here Le Roy lays down Bodin's principle which was to be asserted more urgently in the following century —the permanence of natural forces. Nature is the same now as always, and can produce as great intellects as ever. The elements have the same power, the constellations keep their old order, men are made of the same material. There is nothing to hinder the birth in this age of men equal in brains to Plato, Aristotle, or Hippocrates.

Philosophically, Le Roy's conclusion is lame enough. We are asked to set aside the data of experience and act on an off-chance. But the determination of the optimist to escape from the logic of his own argument is significant. He has no conception of an increasing purpose or underlying unity in the history of man, but he thinks that Providence — the old Providence of St. Augustine, who arranged the events of Roman history with a view to the coming of Christ—may, for some unknown reason, prolong indefinitely the modern age. He is obeying the instinct of optimism and confidence which was already beginning to create the appropriate atmosphere for the intellectual revolution of the coming century.

His book was translated into English, but neither in France nor in England had it the same influence as the speculations of Bodin. But it insinuated, as the reader will have observed, the same three views which Bodin taught, and must

have helped to propagate them: that the world has not degenerated; that the modern age is not inferior to classical antiquity; and that the races of the earth form now a sort of "mundane republic."

CHAPTER II

UTILITY THE END OF KNOWLEDGE: BACON

I

Among the great precursors of a new order of thought Francis Bacon occupies a unique position. He drew up a definite programme for a "great Renovation" of knowledge; he is more clearly conscious than his contemporaries of the necessity of breaking with the past and making a completely new start; and his whole method of thought seems intellectually nearer to us than the speculations of a Bruno or a Campanella. Hence it is easy to understand that he is often regarded, especially in his own country, as more than a precursor, as the first philosopher of the modern age, definitely within its precincts.

It is not indeed a matter of fundamental importance how we classify these men who stood on the border of two worlds, but it must be recognised that if in many respects Bacon is in advance of contemporaries who cannot be dissociated from the Renaissance, in other respects, such as belief in astrology and dreams, he stands on the same ground, and in one essential point—which might almost be taken as the test of mental progress at this period—

Bruno and Campanella have outstripped him. For him Copernicus, Kepler, and Galileo worked in vain; he obstinately adhered to the old geocentric system.

It must also be remembered that the principle which he laid down in his ambitious programme for the reform of science—that experiment is the key for discovering the secrets of nature—was not a new revelation. We need not dwell on the fact that he had been anticipated by Roger Bacon; for the ideas of that wonderful thinker had fallen dead in an age which was not ripe for them. But the direct interrogation of nature was already recognised both in practice and in theory in the sixteenth century. What Bacon did was to insist upon the principle more strongly and explicitly, and to formulate it more precisely. He clarified and explained the progressive ideas which inspired the scientific thought of the last period of the European Renaissance, from which he cannot, I think, be dissociated.

But in clearing up and defining these progressive ideas, he made a contribution to the development of human thought which had far-reaching importance and has a special significance for our present subject. In the hopes of a steady increase of knowledge, based on the application of new methods, he had been anticipated by Roger Bacon, and further back by Seneca. But with Francis Bacon this idea of the augmentation of knowledge has an entirely new value. For Seneca the exploration of nature was a means of escaping from the sordid miseries of life. For the friar of Oxford the principal use of increasing knowledge was to prepare for the coming of Antichrist. Francis Bacon sounded the modern note; for him the end of knowledge is utility.

2

The principle that the proper aim of knowledge is the amelioration of human life, to increase men's happiness and mitigate their sufferings—*commodis humanis inservire*—was the guiding star of Bacon in all his intellectual labour. He declared the advancement of "the happiness of mankind" to be the direct purpose of the works he had written or designed. He considered that all his predecessors had gone wrong because they did not apprehend that the *finis scientiarum*, the real and legitimate goal of the sciences, is "the endowment of human life with new inventions and riches"; and he made this the test for defining the comparative values of the various branches of knowledge.

The true object, therefore, of the investigation of nature is not, as the Greek philosophers held, speculative satisfaction, but to establish the reign of man over nature; and this Bacon judged to be attainable, provided new methods of attacking the problems were introduced. Whatever may be thought of his daring act in bringing natural science down from the clouds and assigning to her the function of ministering to the material convenience and comfort of man, we may criticise Bacon for his doctrine that every branch of science should be pursued with a single eye towards practical use. Mathematics, he thought, should conduct herself as a humble, if necessary, handmaid, without any aspirations of her own. But it is not thus that the great progress in man's command over nature since Bacon's age has been effected. Many of the most valuable and surprising things which science has

succeeded in doing for civilisation would never have been performed if each branch of knowledge were not guided by its own independent ideal of speculative completeness.[1] But this does not invalidate Bacon's pragmatic principle, or diminish the importance of the fact that in laying down the utilitarian view of knowledge he contributed to the creation of a new mental atmosphere in which the theory of Progress was afterwards to develop.

3

Bacon's respect for the ancients and his familiarity with their writings are apparent on almost every page he wrote. Yet it was one of his principal endeavours to shake off the yoke of their authority, which he recognised to be a fatal obstacle to the advancement of science. "Truth is not to be sought in the good fortune of any particular conjuncture of time"; its attainment depends on experience, and how limited was theirs. In their age "the knowledge both of time and of the world was confined and meagre; they had not a thousand years of history worthy of that name, but mere fables and ancient traditions; they were not acquainted with but a small portion of the regions and countries of the world." In all their systems and scientific speculation "there is hardly one single experiment that has a tendency to assist mankind." Their theories were founded on opinion, and therefore science has remained stationary for the last two thousand years; whereas mechanical arts, which are founded on nature and experience, grow and increase.

[1] This was to be well explained by Fontenelle, Préface sur l'utilité des mathématiques, in *Œuvres* (ed. 1729), iii. 1 *sqq*.

In this connection, Bacon points out that the word "antiquity" is misleading, and makes a remark which will frequently recur in writers of the following generations. *Antiquitas seculi iuventus mundi*; what we call antiquity and are accustomed to revere as such was the youth of the world. But it is the old age and increasing years of the world—the time in which we are now living—that deserves in truth to be called antiquity. We are really the ancients, the Greeks and Romans were younger than we, in respect to the age of the world. And as we look to an old man for greater knowledge of the world than from a young man, so we have good reason to expect far greater things from our own age than from antiquity, because in the meantime the stock of knowledge has been increased by an endless number of observations and experiments. Time is the great discoverer, and truth is the daughter of time, not of authority.

Take the three inventions which were unknown to the ancients—printing, gunpowder, and the compass. These "have changed the appearance and state of the whole world; first in literature, then in warfare, and lastly in navigation; and innumerable changes have been thence derived, so that no empire, sect, or star appears to have exercised a greater power or influence on human affairs than these mechanical discoveries."[1] It was perhaps the results of navigation and the exploration of unknown lands that impressed Bacon more than all, as they had impressed Bodin. Let me quote one passage.

[1] *Nov. Org.* 129. We have seen that these three inventions had already been classed together as outstanding by Cardan and Le Roy. They also appear in Campanella. Bodin, as we saw, included them in a longer list.

"It may truly be affirmed to the honour of these times, and in a virtuous emulation with antiquity, that this great building of the world had never through-lights made in it till the age of us and our fathers. For although they [the ancients] had knowledge of the antipodes . . . yet that mought be by demonstration, and not in fact; and if by travel, it requireth the voyage but of half the earth. But to circle the earth, as the heavenly bodies do, was not done nor enterprised till these later times: and therefore these times may justly bear in their word . . . *plus ultra* in precedence of the ancient *non ultra*. . . . And this proficience in navigation and discoveries may plant also an expectation of the further proficience and augmentation of all sciences, because it may seem that they are ordained by God to be coevals, that is, to meet in one age. For so the prophet Daniel, speaking of the latter times foretelleth, *Plurimi pertransibunt, et multiplex erit scientia*: as if the openness and through-passage of the world and the increase of knowledge were appointed to be in the same ages; as we see it is already performed in great part: the learning of these later times not much giving place to the former two periods or returns of learning, the one of the Grecians, the other of the Romans."

In all this we have a definite recognition of the fact that knowledge progresses. Bacon did not come into close quarters with the history of civilisation, but he has thrown out some observations which amount to a rough synthesis. Like Bodin, he divided history into three periods—(1) the antiquities of the world; (2) the middle part of time which comprised two sections, the Greek and the Roman;

(3) "modern history," which included what we now call the Middle Ages. In this sequence three particular epochs stand out as fertile in science and favourable to progress—the Greek, the Roman, and our own—"and scarcely two centuries can with justice be assigned to each." The other periods of time are deserts, so far as philosophy and science are concerned. Rome and Greece are "two exemplar States of the world for arms, learning, moral virtue, policy, and laws." But even in those two great epochs little progress was made in natural philosophy. For in Greece moral and political speculation absorbed men's minds; in Rome, meditation and labour were wasted on moral philosophy, and the greatest intellects were devoted to civil affairs. Afterwards, in the third period, the study of theology was the chief occupation of the Western European nations. It was actually in the earliest period that the most useful discoveries for the comfort of human life were made, "so that, to say the truth, when contemplation and doctrinal science began, the discovery of useful works ceased."

So much for the past history of mankind, during which many things conspired to make progress in the subjugation of nature slow, fitful, and fortuitous. What of the future? Bacon's answer is: if the errors of the past are understood and avoided there is every hope of steady progress in the modern age.

But it might be asked, Is there not something in the constitution of things which determines epochs of stagnation and vigour, some force against which man's understanding and will are impotent? Is it not true that in the revolutions of ages there are

floods and ebbs of the sciences, which flourish now and then decline, and that when they have reached a certain point they can proceed no further? This doctrine of Returns or *ricorsi*[1] is denounced by Bacon as the greatest obstacle to the advancement of knowledge, creating, as it does, diffidence or despair. He does not formally refute it, but he marshals the reasons for an optimistic view, and these reasons supply the disproof. The facts on which the fatalistic doctrine of Returns is based can be explained without resorting to any mysterious law. Progress has not been steady or continuous on account of the prejudices and errors which hindered men from setting to work in the right way. The difficulties in advancing did not arise from things which are not in our power; they were due to the human understanding, which wasted time and labour on improper objects. "In proportion as the errors which have been committed impeded the past, so do they afford reason to hope for the future."

4

But will the new period of advance, which Bacon expected and strove to secure, be of indefinite duration? He does not consider the question. His view that he lived in the old age of the world implies that he did not anticipate a vast tract of time before the end of mankind's career on earth. And an orthodox Christian of that time could hardly be expected to predict. The impression we get is that, in his sanguine enthusiasm, he imagined that a "prudent interrogation" of nature could extort

[1] Bodin's *conversiones*.

all her secrets in a few generations. As a reformer he was so engaged in the immediate prospect of results that his imagination did not turn to the possibilities of a remoter future, though these would logically follow from his recognition of "the inseparable propriety of time which is ever more and more to disclose truth." He hopes everything from his own age in which learning has made her third visitation to the world, a period which he is persuaded will far surpass that of Grecian and Roman learning. If he could have revisited England in 1700 and surveyed what science had performed since his death his hopes might have been more than satisfied.

But, animated though he was with the progressive spirit, as Leonardo da Vinci had been before him, all that he says of the prospects of an increase of knowledge fails to amount to the theory of Progress. He prepares the way, he leads up to it; but his conception of his own time as the old age of humanity excludes the conception of an indefinite advance in the future, which is essential if the theory is to have significance and value. And in regard to progress in the past, though he is clearer and more emphatic than Bodin, he hardly adds anything to what Bodin had observed. The novelty of his view lies not in his recognition of the advance of knowledge and its power to advance still further, but in the purpose which he assigned to it. The end of the sciences is their usefulness to the human race. To increase knowledge is to extend the dominion of man over nature, and so to increase his comfort and happiness, so far as these depend on external circumstances. To Plato or Seneca, or to a Christian

dreaming of the City of God, this doctrine would seem material and trivial; and its announcement was revolutionary: for it implied that happiness on earth was an end to be pursued for its own sake, and to be secured by co-operation for mankind at large. This idea is an axiom which any general doctrine of Progress must presuppose; and it forms Bacon's great contribution to the group of ideas which rendered possible the subsequent rise of that doctrine.

Finally, we must remember that by Bacon, as by most of his Elizabethan contemporaries, the doctrine of an active intervening Providence, the Providence of Augustine, was taken as a matter of course, and governed more or less their conceptions of the history of civilisation. But, I think, we may say that Bacon, while he formally acknowledged it, did not press it or emphasise it.

5

Bacon illustrated his view of the social importance of science in his sketch of an ideal state, the *New Atlantis*. He completed only a part of the work, and the fragment was published after his death.[1] It is evident that the predominating interest that moved his imagination was different from that

[1] In 1627. It was composed about 1623. It seems almost certain that he was acquainted with the *Christianopolis* of Johann Valentin Andreae (1586–1654), which had appeared in Latin in 1614, and contained a plan for a scientific college to reform the civilised world. Andreae, who was acquainted both with More and with Campanella, placed his ideal society in an island which he called Caphar Salama (the name of a village in Palestine). Andreae's work had also a direct influence on the *Nova Solyma* of Samuel Gott (1648). See the Introduction of F. E. Held to his edition of *Christianopolis* (1916). In Macaria, another imaginary state of the seventeenth century (*A description of the famous Kingdome of Macaria*, 1641, by Hartlib), the pursuit of science is not a feature.

which guided Plato. While Plato aimed at securing a permanent solid order founded on immutable principles, the design of Bacon was to enable his imaginary community to achieve dominion over nature by progressive discoveries. The heads of Plato's city are metaphysicians, who regulate the welfare of the people by abstract doctrines established once for all; while the most important feature in the *New Atlantis* is the college of scientific investigators, who are always discovering new truths which may alter the conditions of life. Here, though only in a restricted field, an idea of progressive improvement, which is the note of the modern age, comes in to modify the idea of a fixed order which exclusively prevailed in ancient speculation.

On the other hand, we must not ignore the fact that Bacon's ideal society is established by the same kind of agency as the ideal societies of Plato and Aristotle. It has not developed; it was framed by the wisdom of an original legislator Solamona. In this it resembles the other imaginary commonwealths of the sixteenth and seventeenth centuries. The organisation of More's *Utopia* is fixed initially once for all by the lawgiver Utopus. The origin of Campanella's *Civitas Solis* is not expressly stated, but there can be no doubt that he conceived its institutions as created by the fiat of a single lawgiver. Harrington, in his *Oceana*, argues with Machiavelli that a commonwealth, to be well turned, must be the work of one man, like a book or a building.

What measure of liberty Bacon would have granted to the people of his perfect state we cannot

say; his work breaks off before he comes to describe their condition. But we receive the impression that the government he conceived was strictly paternal, though perhaps less rigorous than the theocratic despotism which Campanella, under Plato's influence, set up in the City of the Sun. But even Campanella has this in common with More—and we may be sure that Bacon's conception would have agreed here—that there are no hard-and-fast lines between the classes, and the welfare and happiness of all the inhabitants is impartially considered, in contrast with Plato's scheme in the *Laws*, where the artisans and manual labourers were an inferior caste existing less for their own sake than for the sake of the community as a whole.[1]

It may finally be pointed out that these three imaginary commonwealths stand together as a group, marked by a humaner temper than the ancient, and also by another common characteristic which distinguishes them, on one hand, from the ideal states of Plato and, on the other, from modern sketches of desirable societies. Plato and Aristotle conceived their constructions within the geographical limits of Hellas, either in the past or in the present. More, Bacon, and Campanella placed theirs in distant seas, and this remoteness in space helped to create a certain illusion of reality. The modern plan is to project the perfect society into a period of future time. The device of More and his successors was suggested by the maritime explorations of the fifteenth and sixteenth centuries; the later method was a result of the rise of the idea of Progress.

[1] This however does not apply to the *Republic*, as is so commonly asserted. See the just criticisms of A. A. Trever, *A History of Greek Economic Thought* (Chicago, 1916), 49 *sqq*.

6

A word or two more may be said about the City of the Sun. Campanella was as earnest a believer in the interrogation of nature as Bacon, and the place which science and learning hold in his state (although research is not so prominent as in the *New Atlantis*), and the scientific training of all the citizens, are a capital feature. The progress in inventions, to which science may look forward, is suggested. The men of the City of the Sun "have already discovered the one art which the world seemed to lack—the art of flying; and they expect soon to invent ocular instruments which will enable them to see the invisible stars and auricular instruments for hearing the harmony of the spheres." Campanella's view of the present conditions and prospects of knowledge is hardly less sanguine than that of Bacon, and characteristically he confirms his optimism by astrological data. "If you only knew what their astrologers say about the coming age. Our times, they assert, have more history in a hundred years than the whole world in four thousand. More books have been published in this century than in five thousand years before. They dwell on the wonderful inventions of printing, of artillery, and of the use of the magnet,—clear signs of the times —and also instruments for the assembling of the inhabitants of the world into one fold," and show that these discoveries were conditioned by stellar influences.

But Campanella is not very sure or clear about the future. Astrology and theology cause him to hesitate. Like Bacon, he dreams of a great Renova-

tion and sees that the conditions are propitious, but his faith is not secure. The astronomers of his imaginary state scrutinise the stars to discover whether the world will perish or not, and they believe in the oracular saying of Jesus that the end will come like a thief in the night. Therefore they expect a new age, and perhaps also the end of the world.

The new age of knowledge was about to begin. Campanella, Bruno, and Bacon stand, as it were, on the brink of the dividing stream, *tenduntque manus ripae ulterioris amore.*

CHAPTER III

CARTESIANISM

If we are to draw any useful lines of demarcation in the continuous flux of history we must neglect anticipations and announcements, and we need not scruple to say that, in the realm of knowledge and thought, modern history begins in the seventeenth century. Ubiquitous rebellion against tradition, a new standard of clear and precise thought which affects even literary expression, a flow of mathematical and physical discoveries so rapid that ten years added more to the sum of knowledge than all that had been added since the days of Archimedes, the introduction of organised co-operation to increase knowledge by the institution of the Royal Society at London, the Academy of Sciences at Paris, Observatories — realising Bacon's Atlantic dream—characterise the opening of a new era.

For the ideas with which we are concerned, the seventeenth century centres round Descartes, whom an English admirer described as "the grand secretary of Nature."[1] Though his brilliant mathematical discoveries were the sole permanent contribution he made to knowledge, though his metaphysical and physical systems are only of

[1] Joseph Glanvill, *Vanity of Dogmatising*, p. 211.

historical interest, his genius exercised a more extensive and transforming influence on the future development of thought than any other man of his century.

Cartesianism affirmed the two positive axioms of the supremacy of reason, and the invariability of the laws of nature; and its instrument was a new rigorous analytical method, which was applicable to history as well as to physical knowledge. The axioms had destructive corollaries. The immutability of the processes of nature collided with the theory of an active Providence. The supremacy of reason shook the thrones from which authority and tradition had tyrannised over the brains of men. Cartesianism was equivalent to a declaration of the Independence of Man.

It was in the atmosphere of the Cartesian spirit that a theory of Progress was to take shape.

I

Let us look back. We saw that all the remarks of philosophers prior to the seventeenth century, which have been claimed as enunciations of the idea of Progress, amount merely to recognitions of the obvious fact that in the course of the past history of men there have been advances and improvements in knowledge and arts, or that we may look for some improvements in the future. There is not one of them that adumbrates a theory that can be called a theory of Progress. We have seen several reasons why the idea could not emerge in the ancient or in the Middle Ages. Nor could it have easily appeared in the period of the

Renaissance. Certain preliminary conditions were required, and these were not fulfilled till the seventeenth century.

So long as men believed that the Greeks and Romans had attained, in the best days of their civilisation, to an intellectual plane which posterity could never hope to reach, so long as the authority of their thinkers was set up as unimpeachable, a theory of degeneration held the field, which excluded a theory of Progress. It was the work of Bacon and Descartes to liberate science and philosophy from the yoke of that authority; and at the same time, as we shall see, the rebellion began to spread to other fields.

Another condition for the organisation of a theory of Progress was a frank recognition of the value of mundane life and the subservience of knowledge to human needs. The secular spirit of the Renaissance prepared the world for this new valuation, which was formulated by Bacon, and has developed into modern utilitarianism.

There was yet a third preliminary condition. There can be no certainty that knowledge will continually progress until science has been placed on sure foundations. And science does not rest for us on sure foundations unless the invariability of the laws of nature is admitted. If we do not accept this hypothesis, if we consider it possible that the uniformities of the natural world may be changed from time to time, we have no guarantee that science can progress indefinitely. The philosophy of Descartes established this principle, which is the palladium of science; and thus the third preliminary condition was fulfilled.

2

During the Renaissance period the authority of the Greeks and Romans had been supreme in the realm of thought, and in the interest of further free development it was necessary that this authority should be weakened. Bacon and others had begun the movement to break down this tyranny, but the influence of Descartes was weightier and more decisive, and his attitude was more uncompromising. He had none of Bacon's reverence for classical literature; he was proud of having forgotten the Greek which he had learned as a boy. The inspiration of his work was the idea of breaking sharply and completely with the past, and constructing a system which borrows nothing from the dead. He looked forward to an advancement of knowledge in the future, on the basis of his own method and his own discoveries,[1] and he conceived that this intellectual advance would have far-reaching effects on the condition of mankind. The first title he had proposed to give to his *Discourse on Method* was "The Project of a Universal Science which can elevate our Nature to its highest degree of Perfection." He regarded moral and material improvement as depending on philosophy and science.

The justification of an independent attitude towards antiquity, on the ground that the world is now older and more mature, was becoming a current view. Descartes expressed it like Bacon, and it was taken up and repeated by many whom

[1] Cp. for instance his remarks on medicine, at the end of the *Discours de la méthode*.

Descartes influenced. Pascal, who till 1654 was a man of science and a convert to Cartesian ideas, put it in a striking way. The whole sequence of men (he says) during so many centuries should be considered as a single man, continually existing and continually learning. At each stage of his life this universal man profited by the knowledge he had acquired in the preceding stages, and he is now in his old age. This is a fuller, and probably an independent, development of the comparison of the race to an individual which we found in Bacon. It occurs in a fragment which remained unpublished for more than a hundred years, and is often quoted as a recognition, not of a general progress of man, but of a progress in human knowledge.

To those who reproached Descartes with disrespect towards ancient thinkers he might have replied that, in repudiating their authority, he was really paying them the compliment of imitation and acting far more in their own spirit than those who slavishly followed them. Pascal saw this point. "What can be more unjust," he wrote, "than to treat our ancients with greater consideration than they showed towards their own predecessors, and to have for them this incredible respect which they deserve from us only because they entertained no such regard for those who had the same advantage (of antiquity) over them?"

At the same time Pascal recognised that we are indebted to the ancients for our very superiority to them in the extent of our knowledge. "They reached a certain point, and the slightest effort enables us to mount higher; so that we find our-

selves on a loftier plane with less trouble and less glory." The attitude of Descartes was very different. Aspiring to begin *ab integro* and reform the foundations of knowledge, he ignored or made little of what had been achieved in the past. He attempted to cut the threads of continuity as with the shears of Atropos. This illusion[1] hindered him from stating a doctrine of the progress of knowledge as otherwise he might have done. For any such doctrine must take account of the past as well as of the future.

But a theory of progress was to grow out of his philosophy, though he did not construct it. It was to be developed by men who were imbued with the Cartesian spirit.

3

The theological world in France was at first divided on the question whether the system of Descartes could be reconciled with orthodoxy or not. The Jesuits said no, the Fathers of the Oratory said yes. The Jansenists of Port Royal were enthusiastic Cartesians. Yet it was probably the influence of the great spiritual force of Jansenism that did most to check the immediate spread of Cartesian ideas. It was preponderant in France for fifty years. The date of the *Discourse of Method* is 1637. The *Augustinus* of Jansenius was published in 1640, and in 1643 Arnauld's *Frequent Communion* made Jansenism a popular power.

The Jansenist movement was in France in some measure what the Puritan movement was in England,

[1] He may be reproached himself with scholasticism in his metaphysical reasoning.

and it caught hold of serious minds in much the same way. The Jesuits had undertaken the task of making Christianity easy, of finding a compromise between worldliness and religion, and they flooded the world with a casuistic literature designed for this purpose. *Ex opinionum varietate jugum Christi suavius deportatur.* The doctrine of Jansenius was directed against this corruption of faith and morals. He maintained that there can be no compromise with the world; that casuistry is incompatible with morality; that man is naturally corrupt; and that in his most virtuous acts some corruption is present.

Now the significance of these two forces—the stern ideal of the Jansenists and the casuistry of the Jesuit teachers—is that they both attempted to meet, by opposed methods, the wave of libertine thought and conduct which is a noticeable feature in the history of French society from the reign of Henry IV. to that of Louis XV. This libertinism had its philosophy, a sort of philosophy of nature, of which the most brilliant exponents were Rabelais and Molière. The maxim, "Be true to nature," was evidently opposed sharply to the principles of the Christian religion, and it was associated with sceptical views which prevailed widely in France from the early years of the seventeenth century. The Jesuits sought to make terms by saying virtually: "Our religious principles and your philosophy of nature are not after all so incompatible in practice. When it comes to the application of principles, opinions differ. Theology is as elastic as you like. Do not abandon your religion on the ground that her yoke is hard." Jansenius

and his followers, on the other hand, fought uncompromisingly with the licentious spirit of the time, maintaining the austerest dogmas and denouncing any compromise or condescension. And their doctrine had a wonderful success, and penetrated everywhere. Few of the great literary men of the reign of Louis XIV. escaped it. Its influence can be traced in the *Maximes* of La Rochefoucauld and the *Caractères* of La Bruyère. It was through its influence that Molière found it difficult to get some of his plays staged. It explains the fact that the court of Louis XIV., however corrupt, was decorous compared with the courts of Henry IV. and Louis XV.; a severe standard was set up, if it was not observed.

The genius of Pascal made the fortunes of Jansenism. He outlived his Cartesianism and became its most influential spokesman. His *Provinciales* (1656) rendered abstruse questions of theology more or less intelligible, and invited the general public to pronounce an opinion on them. His lucid exposition interested every one in the abstruse problem, Is man's freedom such as not to render grace superfluous? But Pascal perceived that casuistry was not the only enemy that menaced the true spirit of religion for which Jansenism stood. He came to realise that Cartesianism, to which he was at first drawn, was profoundly opposed to the fundamental views of Christianity. His *Pensées* are the fragments of a work which he designed in defence of religion, and it is easy to see that this defence was to be specially directed against the ideas of Descartes.

Pascal was perfectly right about the Cartesian

conception of the Universe, though Descartes might pretend to mitigate its tendencies, and his fervent disciple, Malebranche, might attempt to prove that it was more or less reconcilable with orthodox doctrine. We need not trouble about the special metaphysical tenets of Descartes. The two axioms which he launched upon the world—the supremacy of reason, and the invariability of natural laws—struck directly at the foundations of orthodoxy. Pascal was attacking Cartesianism when he made his memorable attempt to discredit the authority of reason, by showing that it is feeble and deceptive. It was a natural consequence of his changed attitude that he should speak (in the *Pensées*) in a much less confident tone about the march of science than he had spoken in the passage which I quoted above. And it was natural that he should be pessimistic about social improvement, and that, keeping his eyes fixed on his central fact that Christianity is the goal of history, he should take only a slight and subsidiary interest in amelioration.

The preponderant influence of Jansenism only began to wane during the last twenty years of the seventeenth century, and till then it seems to have been successful in counteracting the diffusion of the Cartesian ideas. Cartesianism begins to become active and powerful when Jansenism is beginning to decline. And it is just then that the idea of Progress begins definitely to emerge. The atmosphere in France was favourable for its reception.

4

The Cartesian mechanical theory of the world and the doctrine of invariable law, carried to a logical conclusion, excluded the doctrine of Providence. This doctrine was already in serious danger. Perhaps no article of faith was more insistently attacked by sceptics in the seventeenth century, and none was more vital. The undermining of the theory of Providence is very intimately connected with our subject; for it was just the theory of an active Providence that the theory of Progress was to replace; and it was not till men felt independent of Providence that they could organise a theory of Progress.

Bossuet was convinced that the question of Providence was the most serious and pressing among all the questions of the day that were at issue between orthodox and heretical thinkers. Brunetière, his fervent admirer, has named him the theologian of Providence, and has shown that in all his writings this doctrine is a leading note. It is sounded in his early sermons in the fifties, and it is the theme of his most ambitious work, the *Discourse on Universal History*, which appeared in 1681. This book, which has received high praise from those who most heartily dissent from its conclusions, is in its main issue a restatement of the view of history which Augustine had worked out in his memorable book. The whole course of human experience has been guided by Providence for the sake of the Church; that is, for the sake of the Church to which Bossuet belonged. Regarded as a philosophy of history the *Discourse* may seem

little more than the theory of the *De Civitate Dei* brought up to date; but this is its least important aspect. We shall fail to understand it unless we recognise that it was a pragmatical, opportune work, designed for the needs of the time, and with express references to current tendencies of thought.

One main motive of Bossuet in his lifelong concern for Providence was his conviction that the doctrine was the most powerful check on immorality, and that to deny it was to remove the strongest restraint on the evil side of human nature. There is no doubt that the free-living people of the time welcomed the arguments which called Providence in question, and Bossuet believed that to champion Providence was the most efficient means of opposing the libertine tendencies of his day. "Nothing," he declared in one of his sermons (1662), "has appeared more insufferable to the arrogance of libertines than to see themselves continually under the observation of this ever-watchful eye of Providence. They have felt it as an importunate compulsion to recognise that there is in Heaven a superior force which governs all our movements and chastises our loose actions with a severe authority. They have wished to shake off the yoke of this Providence, in order to maintain, in independence, an unteachable liberty which moves them to live at their own fancy, without fear, discipline, or restraint." Bossuet was thus working in the same cause as the Jansenists.

He had himself come under the influence of Descartes, whose work he always regarded with the deepest respect. The cautiousness of the master had done much to disguise the insidious dangers of his thought, and it was in the hands of those

disciples who developed his system and sought to reconcile it at all points with orthodoxy that his ideas displayed their true nature. Malebranche's philosophy revealed the incompatibility of Providence — in the ordinary acceptation — with immutable natural laws. If the Deity acts upon the world, as Malebranche maintained, only by means of general laws, His freedom is abolished, His omnipotence is endangered, He is subject to a sort of fatality. What will become of the Christian belief in the value of prayers, if God cannot adapt or modify, on any given occasion, the general order of nature to the needs of human beings? These are some of the arguments which we find in a treatise composed by Fénelon, with the assistance of Bossuet, to demonstrate that the doctrine of Malebranche is inconsistent with piety and orthodox religion. They were right. Cartesianism was too strong a wine to be decanted into old bottles.

Malebranche's doctrine of what he calls divine Providence was closely connected with his philosophical optimism. It enabled him to maintain the perfection of the universe. Admitting the obvious truth that the world exhibits many imperfections, and allowing that the Creator could have produced a better result if he had employed other means, Malebranche argued that, in judging the world, we must take into account not only the result but the methods by which it has been produced. It is the best world, he asserts, that could be framed by general and simple methods; and general and simple methods are the most perfect, and alone worthy of the Creator. Therefore, if we take the methods and the result together, a more perfect

world is impossible. The argument was ingenious, though full of assumptions, but it was one which could only satisfy a philosopher. It is little consolation to creatures suffering from the actual imperfections of the system into which they are born to be told that the world might have been free from those defects, only in that case they would not have the satisfaction of knowing that it was created and conducted on theoretically superior principles.

Though Malebranche's conception was only a metaphysical theory, metaphysical theories have usually their pragmatic aspects; and the theory that the universe is as perfect as it could be marks a stage in the growth of intellectual optimism which we can trace from the sixteenth century. It was a view which could appeal to the educated public in France, for it harmonised with the general spirit of self-complacency and hopefulness which prevailed among the higher classes of society in the reign of Louis XIV. For them the conditions of life under the new despotism had become far more agreeable than in previous ages, and it was in a spirit of optimism that they devoted themselves to the enjoyment of luxury and elegance. The experience of what the royal authority could achieve encouraged men to imagine that one enlightened will, with a centralised administration at its command, might accomplish endless improvements in civilisation. There was no age had ever been more glorious, no age more agreeable to live in.

The world had begun to abandon the theory of corruption, degeneration, and decay.

Some years later the optimistic theory of the

perfection of the universe found an abler exponent in Leibnitz, whom Diderot calls the father of optimism. The Creator, before He acted, had considered all possible worlds, and had chosen the best. He might have chosen one in which humanity would have been better and happier, but that would not have been the best possible, for He had to consider the interests of the whole universe, of which the earth with humanity is only an insignificant part. The evils and imperfections of our small world are negligible in comparison with the happiness and perfection of the whole cosmos. Leibnitz, whose theory is deduced from the abstract proposition that the Creator is perfect, does not say that now or at any given moment the universe is as perfect as it could be; its merit lies in its potentialities; it will develop towards perfection throughout infinite time.

The optimism of Leibnitz therefore concerns the universe as a whole, not the earth, and would obviously be quite consistent with a pessimistic view of the destinies of humanity. He does indeed believe that it would be impossible to improve the universal order, "not only for the whole, but for ourselves in particular," and incidentally he notes the possibility that "in the course of time the human race may reach a greater perfection than we can imagine at present." But the significance of his speculation and that of Malebranche lies in the fact that the old theories of degeneration are definitely abandoned.

CHAPTER IV

THE DOCTRINE OF DEGENERATION: THE ANCIENTS AND MODERNS

Outside the circle of systematic thinkers the prevalent theory of degeneration was being challenged early in the seventeenth century. The challenge led to a literary war, which was waged for about a hundred years in France and England, over the comparative merits of the ancients and the moderns. It was in the matter of literature, and especially poetry, that the quarrel was most acrimonious, and that the interest of the public was most keenly aroused, but the ablest disputants extended the debate to the general field of knowledge. The quarrel of the Ancients and Moderns used commonly to be dismissed as a curious and rather ridiculous episode in the history of literature.[1] Auguste Comte was, I think, one of the first to call attention to some of its wider bearings.

The quarrel, indeed, has considerable significance in the history of ideas. It was part of the rebellion against the intellectual yoke of the Renaissance; the cause of the Moderns, who were the aggressors, represented the liberation of criticism from the

[1] The best and fullest work on the subject is Rigault's *Histoire de la querelle des Anciens et des Modernes* (1856).

authority of the dead; and, notwithstanding the perversities of taste of which they were guilty, their polemic, even on the purely literary side, was distinctly important, as M. Brunetière has convincingly shown,[1] in the development of French criticism. But the form in which the critical questions were raised forced the debate to touch upon a problem of greater moment. The question, Can the men of to-day contend on equal terms with the illustrious ancients, or are they intellectually inferior? implied the larger issue, Has nature exhausted her powers; is she no longer capable of producing men equal in brains and vigour to those whom she once produced; is humanity played out, or are her forces permanent and inexhaustible?

The assertion of the permanence of the powers of nature by the champions of the Moderns was the direct contradiction of the theory of degeneration, and they undoubtedly contributed much towards bringing that theory into discredit. When we grasp this it will not be surprising to find that the first clear assertions of a doctrine of progress in knowledge were provoked by the controversy about the Ancients and Moderns.

I

Although the great scene of the controversy was France, the question had been expressly raised by an Italian, no less a person than Alessandro Tassoni, the accomplished author of that famous ironical poem, "La Secchia rapita," which caricatured the epic poets of his day. He was bent on exposing

[1] See his *L'Évolution des genres dans l'histoire de la littérature.*

the prejudices of his time and uttering new doctrine, and he created great scandal in Italy by his attacks on Petrarch, as well as on Homer and Aristotle. The earliest comparison of the merits of the ancients and the moderns will be found in a volume of *Miscellaneous Thoughts* which he published in 1620.[1] He speaks of the question as a matter of current dispute,[2] on which he proposes to give an impartial decision by instituting a comprehensive comparison in all fields, theoretical, imaginative, and practical.

He begins by criticising the *a priori* argument that, as arts are brought to perfection by experience and long labour, the modern age must necessarily have the advantage. This reasoning, he says, is unsound, because the same arts and studies are not always uninterruptedly pursued by the most powerful intellects, but pass into inferior hands, and so decline or are even extinguished, as was the case in Italy in the decrepitude of the Roman Empire, when for many centuries the arts fell below mediocrity. Or, to phrase it otherwise, the argument would be admissible only if there were no breaches of continuity.[3]

In drawing his comparison Tassoni seeks to make good his claim that he is not an advocate.

[1] *Dieci libri di pensieri diversi* (Carpi, 1620). The first nine books had appeared in 1612. The tenth contains the comparison. Rigault was the first to connect this work with the history of the controversy.

[2] It was incidental to the controversy which arose over the merits of Tasso's *Jerusalem Delivered*. That the subject had been discussed long before may be inferred from a remark of Estienne in his *Apology for Herodotus*, that while some of his contemporaries carry their admiration of antiquity to the point of superstition, others depreciate and trample it underfoot.

[3] Tassoni argues that a decline in all pursuits is inevitable when a certain point of excellence has been reached, quoting Velleius Paterculus (i. 17): *difficilisque in perfecto mora est naturaliterque quod procedere non potest recedit.*

But while he awards superiority here and there to the ancients, the moderns on the whole have much the best of it. He takes a wide enough survey, including the material side of civilisation, even costume, in contrast with some of the later controversialists, who narrowed the field of debate to literature and art.

Tassoni's *Thoughts* were translated into French, and the book was probably known to Boisrobert, a dramatist who is chiefly remembered for the part he took in founding the Académie française. He delivered a discourse before that body immediately after its institution (February 26, 1635), in which he made a violent and apparently scurrilous attack on Homer. This discourse kindled the controversy in France, and even struck a characteristic note. Homer—already severely handled by Tassoni—was to be the special target for the arrows of the Moderns, who felt that, if they could succeed in discrediting him, their cause would be won.

Thus the gauntlet was flung—and it is important to note this—before the appearance of the *Discourse of Method* (1637); but the influence of Descartes made itself felt throughout the controversy, and the most prominent moderns were men who had assimilated Cartesian ideas. This seems to be true even of Desmarets de Saint Sorlin, who, a good many years after the discourse of Boisrobert, opened the campaign. Saint Sorlin had become a fanatical Christian; that was one reason for hating the ancients. He was also, like Boisrobert, a bad poet; that was another. His thesis was that the history of Christianity offered subjects far more inspiring to a poet than those which had been

treated by Homer and Sophocles, and that Christian poetry must bear off the palm from pagan. His own *Clovis* and *Mary Magdalene or the Triumph of Grace* were the demonstration of Homer's defeat. Few have ever heard of these productions; how many have read them? Curiously, about the same time an epic was being composed in England which might have given to the foolish contentions of Saint Sorlin some illusory plausibility.

But the literary dispute does not concern us here. What does concern us is that Saint Sorlin was aware of the wider aspects of the question, though he was not seriously interested in them. Antiquity, he says, was not so happy or so learned or so rich or so stately as the modern age, which is really the mature old age, and as it were the autumn of the world, possessing the fruits and the spoils of all the past centuries, with the power to judge of the inventions, experiences, and errors of predecessors, and to profit by all that. The ancient world was a spring which had only a few flowers. Nature indeed, in all ages, produces perfect works; but it is not so with the creations of man, which require correction; and the men who live latest must excel in happiness and knowledge. Here we have both the assertion of the permanence of the forces of nature and the idea, already expressed by Bacon and others, that the modern age has advantages over antiquity comparable to those of old age over childhood.

2

How seriously the question between the Moderns and the Ancients — on whose behalf

Boileau had come forward and crossed swords with Saint Sorlin—was taken is shown by the fact that Saint Sorlin, before his death, solemnly bequeathed the championship of the Moderns to a younger man, Charles Perrault. We shall see how he fulfilled the trust. It is illustrated too by a book which appeared in the seventies, *Les Entretiens d'Ariste et Eugène*, by Bouhours, a mundane and popular Jesuit Father. In one of these dialogues the question is raised, but with a curious caution and evasiveness, which suggests that the author was afraid to commit himself; he did not wish to make enemies.[1]

The general atmosphere in France, in the reign of Louis XIV., was propitious to the cause of the Moderns. Men felt that it was a great age, comparable to the age of Augustus, and few would have preferred to have lived at any other time. Their literary artists, Corneille, and then Racine and Molière, appealed so strongly to their taste that they could not assign to them any rank but the first. They were impatient of the claims to unattainable excellence advanced for the Greeks and Romans. "The ancients," said Molière, "are the ancients, we are the people of to-day." This might be the motto of Descartes, and it probably expressed a very general feeling.

It was in 1687 that Charles Perrault—who is

[1] Rigault notes that he makes one contribution to the subject, the idea that the torch of civilisation has passed from country to country, in different ages, *e.g.* from Greece to Rome, and recently from Italy to France. In the last century the Italians were first in *doctrine* and *politesse*. The present century is for France what the last was for Italy: "We have all the *esprit* and all the *science*, all other countries are barbarous in comparison" (p. 239, ed. 1782, Amsterdam). But, as we shall see, he had been anticipated by Hakewill, whose work was unknown to Rigault.

better remembered for his collection of fairy-tales than for the leading *rôle* which he played in this controversy—published his poem on "The Age of Louis the Great." The enlightenment of the present age surpasses that of antiquity,—this is the theme.

> La docte Antiquité dans toute sa durée
> À l'égal de nos jours ne fut point éclairée.

Perrault adopts a more polite attitude to "la belle antiquité" than Saint Sorlin, but his criticism is more insidious. Greek and Roman men of genius, he suggests, were all very well in their own times, and might be considered divine by our ancestors. But nowadays Plato is rather tiresome; and the "inimitable Homer" would have written a much better epic if he had lived in the reign of Louis the Great. The important passage, however, in the poem is that in which the permanent power of nature to produce men of equal talent in every age is affirmed.

> À former les esprits comme à former les corps
> La Nature en tout temps fait les mesmes efforts;
> Son être est immuable, et cette force aisée
> Dont elle produit tout ne s'est point épuisée;
>
> . . . . .
>
> De cette mesme main les forces infinies
> Produisent en tout temps de semblables génies.

The "Age of Louis the Great" was a brief declaration of faith. Perrault followed it up by a comprehensive work, his Comparison of the Ancients and the Moderns (*Parallèle des Anciens et des Modernes*), which appeared in four parts during the following years (1688–1696). Art, eloquence, poetry, the sciences, and their practical applications are all

discussed at length; and the discussion is thrown into the form of conversations between an enthusiastic champion of the modern age, who conducts the debate, and a devotee of antiquity, who finds it difficult not to admit the arguments of his opponent, yet obstinately persists in his own views.

Perrault bases his thesis on those general considerations which we have met incidentally in earlier writers, and which were now almost commonplaces among those who paid any attention to the matter. Knowledge advances with time and experience; perfection is not necessarily associated with antiquity; the latest comers have inherited from their predecessors and added new acquisitions of their own. But Perrault has thought out the subject methodically, and he draws conclusions which have only to be extended to amount to a definite theory of the progress of knowledge.

A particular difficulty had done much to hinder a general admission of progressive improvement in the past. The proposition that the posterior is better and the late comers have the advantage seemed to be incompatible with an obvious historical fact. We are superior to the men of the dark ages in knowledge and arts. Granted. But will you say that the men of the tenth century were superior to the Greeks and Romans? To this question—on which Tassoni had already touched—Perrault replies: Certainly not. There are breaches of continuity. The sciences and arts are like rivers, which flow for part of their course underground, and then, finding an opening, spring forth as abundant as when they plunged beneath the earth. Long wars, for instance, may force peoples to neglect studies and

throw all their vigour into the more urgent needs of self-preservation; a period of ignorance may ensue; but with peace and felicity knowledge and inventions will begin again and make further advances.

It is to be observed that he does not claim any superiority in talents or brain power for the moderns. On the contrary, he takes his stand on the principle which he had asserted in the "Age of Louis the Great," that nature is immutable. She still produces as great men as ever, but she does not produce greater. The lions of the deserts of Africa in our days do not differ in fierceness from those of the days of Alexander the Great, and the best men of all times are equal in vigour. It is their work and productions that are unequal, and, given equally favourable conditions, the latest must be the best. For science and the arts depend upon the accumulation of knowledge, and knowledge necessarily increases as time goes on.

But could this argument be applied to poetry and literary art, the field of battle in which the belligerents, including Perrault himself, were most deeply interested? It might prove that the modern age was capable of producing poets and men of letters no less excellent than the ancient masters, but did it prove that their works must be superior? The objection did not escape Perrault, and he answers it ingeniously. It is the function of poetry and eloquence to please the human heart, and in order to please it we must know it. Is it easier to penetrate the secrets of the human heart than the secrets of nature, or will it take less time? We are always making new discoveries about its passions and desires. To take only the tragedies of Corneille,

you will find there finer and more delicate reflections on ambition, vengeance, and jealousy than in all the books of antiquity. At the close of his *Parallel*, however, Perrault, while he declares the general superiority of the moderns, makes a reservation in regard to poetry and eloquence "for the sake of peace."

The discussion of Perrault falls far short of embodying a full idea of Progress. Not only is he exclusively concerned with progress in knowledge—though he implies, indeed, without developing, the doctrine that happiness depends on knowledge—but he has no eyes for the future, and no interest in it. He is so impressed with the advance of knowledge in the recent past that he is almost incapable of imagining further progression. "Read the journals of France and England," he says, "and glance at the publications of the Academies of these great kingdoms, and you will be convinced that within the last twenty or thirty years more discoveries have been made in natural science than throughout the period of learned antiquity. I own that I consider myself fortunate to know the happiness we enjoy; it is a great pleasure to survey all the past ages in which I can see the birth and the progress of all things, but nothing which has not received a new increase and lustre in our own times. Our age has, in some sort, arrived at the summit of perfection. And since for some years the rate of the progress is much slower and appears almost insensible — as the days seem to cease lengthening when the solstice is near—it is pleasant to think that probably there are not many things for which we need envy future generations."

Indifference to the future, or even a certain scepticism about it, is the note of this passage, and accords with the view that the world has reached its old age. The idea of the progress of knowledge, which Perrault expounds, is still incomplete.

3

Independently of this development in France, the doctrine of degeneration had been attacked, and the comparison of the ancients with the moderns incidentally raised, in England.

A divine named George Hakewill published in 1627 a folio of six hundred pages to confute "the common error touching Nature's perpetual and universal decay."[1] He and his pedantic book, which breathes the atmosphere of the sixteenth century, are completely forgotten; and though it ran to three editions, it can hardly have attracted the attention of many except theologians. The writer's object is to prove that the power and providence of God in the government of the world are not consistent with the current view that the physical universe, the heavens and the elements, are undergoing a process of decay, and that man is degenerating physically, mentally, and morally. His arguments in general are futile as well as tedious. But he has profited by reading Bodin and Bacon, whose ideas, it would appear, were already agitating theological minds.

A comparison between the ancients and the moderns arises in a general refutation of the

[1] *An Apologie or Declaration of the Power and Providence of God in the Government of the World, consisting in an Examination and Censure of the common Errour, etc.* (1627, 1630, 1635).

doctrine of decay, as naturally as the question of the stability of the powers of nature arises in a comparison between the ancients and moderns. Hakewill protests against excessive admiration of antiquity, just because it encourages the opinion of the world's decay. He gives his argument a much wider scope than the French controversialists. For him the field of debate includes not only science, arts, and literature, but physical qualities and morals. He seeks to show that mentally and physically there has been no decay, and that the morals of modern Christendom are immensely superior to those of pagan times. There has been social progress, due to Christianity; and there has been an advance in arts and knowledge.

> Multa dies uariusque labor mutabilis aeui
> Rettulit in melius.

Hakewill, like Tassoni, surveys all the arts and sciences, and concludes that the moderns are equal to the ancients in poetry, and in almost all other things excel them.

One of the arguments which he urges against the theory of degeneration is pragmatic — its paralysing effect on human energy. "The opinion of the world's universal decay quails the hopes and blunts the edge of men's endeavours." And the effort to improve the world, he implies, is a duty we owe to posterity.

"Let not then the vain shadows of the world's fatal decay keep us either from looking backward to the imitation of our noble predecessors or forward in providing for posterity, but as our predecessors worthily provided for us, so let our

posterity bless us in providing for them, it being still as uncertain to us what generations are still to ensue, as it was to our predecessors in their ages."

We note the suggestion that history may be conceived as a sequence of improvements in civilisation, but we note also that Hakewill here is faced by the obstacle which Christian theology offered to the logical expansion of the idea. It is uncertain what generations are still to ensue. Roger Bacon stood before the same dead wall. Hakewill thinks that he is living in the last age of the world; but how long it shall last is a question which cannot be resolved, "it being one of those secrets which the Almighty hath locked up in the cabinet of His own counsel." Yet he consoles himself and his readers with a consideration which suggests that the end is not yet very near. "It is agreed upon all sides by Divines that at least two signs forerunning the world's end remain unaccomplished—the subversion of Rome and the conversion of the Jews. And when they shall be accomplished God only knows, as yet in man's judgment there being little appearance of the one or the other."

It was well to be assured that nature is not decaying or man degenerating. But was the doctrine that the end of the world does not "depend upon the law of nature," and that the growth of human civilisation may be cut off at any moment by a fiat of the Deity, less calculated to "quail the hopes and blunt the edge of men's endeavours?" Hakewill asserted with confidence that the universe will be suddenly wrecked by fire. *Una dies dabit exitio.* Was the prospect of an arrest which might come

the day after to-morrow likely to induce men to exert themselves to make provision for posterity?

The significance of Hakewill lies in the fact that he made the current theory of degeneration, which stood in the way of all possible theories of progress, the object of a special inquiry. And his book illustrates the close connection between that theory and the dispute over the Ancients and Moderns. It cannot be said that he has added anything valuable to what may be found in Bodin and Bacon on the development of civilisation. The general synthesis of history which he attempts is equivalent to theirs. He describes the history of knowledge and arts, and all things besides, as exhibiting "a kind of circular progress," by which he means that they have a birth, growth, flourishing, failing and fading, and then within a while after a resurrection and reflourishing. In this method of progress the lamp of learning passed from one people to another. It passed from the Orientals (Chaldeans and Egyptians) to the Greeks; when it was nearly extinguished in Greece it began to shine afresh among the Romans; and having been put out by the barbarians for the space of a thousand years it was relit by Petrarch and his contemporaries. In stating this view of "circular progress," Hakewill comes perilously near to the doctrine of Ricorsi or Returns which had been severely denounced by Bacon.

In one point indeed Hakewill goes far beyond Bodin. It was suggested, as we saw, by the French thinker that in some respects the modern age is superior in conduct and morals to antiquity, but he said little on the matter. Hakewill

develops the suggestion at great length into a severe and partial impeachment of ancient manners and morals. Unjust and unconvincing though his arguments are, and inspired by theological motives, his thesis nevertheless deserves to be noted as an assertion of the progress of man in social morality. Bacon, and the thinkers of the seventeenth century generally, confined their views of progress in the past to the intellectual field. Hakewill, though he overshot the mark and said nothing actually worth remembering, nevertheless anticipated the larger problem of social progress which was to come to the front in the eighteenth century.

4

During the forty years that followed the appearance of Hakewill's book much had happened in the world of ideas, and when we take up Glanvill's *Plus ultra, or the Progress and Advancement of Knowledge since the days of Aristotle*,[1] we breathe a different atmosphere. It was published in 1668, and its purpose was to defend the recently founded Royal Society which was attacked on the ground that it was inimical to the interests of religion and sound learning. For the Aristotelian tradition was still strongly entrenched in the English Church and Universities, notwithstanding the influence of Bacon; and the Royal Society, which realised "the romantic model" of Bacon's society of experimenters, repudiated the scholastic principles and methods associated with Aristotle's name.

Glanvill was one of those latitudinarian clergy-

[1] The title is evidently suggested by a passage in Bacon quoted above, p. 55.

men, so common in the Anglican Church in the seventeenth century, who were convinced that religious faith must accord with reason, and were unwilling to abate in its favour any of reason's claims. He was under the influence of Bacon, Descartes, and the Cambridge Platonists, and no one was more enthusiastic than he in following the new scientific discoveries of his time. Unfortunately for his reputation he had a weak side. Enlightened though he was, he was a firm believer in witchcraft, and he is chiefly remembered not as an admirer of Descartes and Bacon, and a champion of the Royal Society, but as the author of *Saducismus Triumphatus*, a monument of superstition, which probably contributed to check the gradual growth of disbelief in witches and apparitions.

His *Plus ultra* is a review of modern improvements of useful knowledge. It is confined to mathematics and science, in accordance with its purpose of justifying the Royal Society; and the discoveries of the past sixty years enable the author to present a far more imposing picture of modern scientific progress than was possible for Bodin or Bacon.[1] He had absorbed Bacon's doctrine of utility. His spirit is displayed in the remark that more gratitude is due to the unknown inventor of the mariners' compass

"than to a thousand Alexanders and Caesars, or to ten times the number of Aristotles. And he really did more for the increase of knowledge and the advantage of

[1] Bacon indeed could have made out a more impressive picture of the new age if he had studied mathematics and taken the pains to master the evidence which was revolutionising astronomy. Glanvill had the advantage of comprehending the importance of mathematics for the advance of physical science.

the world by this one experiment than the numerous subtile disputers that have lived ever since the erection of the school of talking."

Glanvill, however, in his complacency with what has already been accomplished, is not misled into over-estimating its importance. He knows that it is indeed little compared with the ideal of attainable knowledge. The human design, to which it is the function of the Royal Society to contribute, is laid as low, he says, as the profoundest depths of nature, and reaches as high as the uppermost storey of the universe, extends to all the varieties of the great world, and aims at the benefit of universal mankind. Such a work can only proceed slowly, by insensible degrees. It is an undertaking wherein all the generations of men are concerned, and our own age can hope to do little more than to remove useless rubbish, lay in materials, and put things in order for the building. "We must seek and gather, observe and examine, and lay up in bank for the ages that come after."

These lines on "the vastness of the work" suggest to the reader that a vast future will be needed for its accomplishment. Glanvill does not dwell on this, but he implies it. He is evidently unembarrassed by the theological considerations which weighed so heavily on Hakewill. He does not trouble himself with the question whether Anti-Christ has still to appear. The difference in general outlook between these two clergymen is an indication how the world had travelled in the course of forty years.

Another point in Glanvill's little book deserves

attention. He takes into his prospect the inhabitants of the Transatlantic world; they, too, are to share in the benefits which shall result from the subjugation of nature.

"By the gaining that mighty continent and the numerous fruitful isles beyond the Atlantic, we have obtained a larger field of nature, and have thereby an advantage for more phenomena, and more helps both for knowledge and for life, which 'tis very like that future ages will make better use of to such purposes than those hitherto have done; and that science also may at last travel into those parts and enrich Peru with a more precious treasure than that of its golden mines, is not improbable."

Sprat, the Bishop of Rochester, in his interesting *History of the Royal Society*, so sensible and liberal—published shortly before Glanvill's book,—also contemplates the extension of science over the world. Speaking of the prospect of future discoveries, he thinks it will partly depend on the enlargement of the field of western civilisation "if this mechanic genius which now prevails in these parts of Christendom shall happen to spread wide amongst ourselves and other civil nations, or if by some good fate it shall pass farther on to other countries that were yet never fully civilised."

This then being imagin'd, that there may some lucky tide of civility flow into those lands which are yet salvage, then will a double improvement thence arise both in respect of ourselves and them. For even the present skilful parts of mankind will be thereby made more skilful, and the other will not only increase those arts which we shall bestow upon them, but will also venture on new searches themselves.

He expects much from the new converts, on the ground that nations which have been taught have proved more capable than their teachers, appealing to the case of the Greeks who outdid their eastern masters, and to that of the peoples of modern Europe who received their light from the Romans but have "well nigh doubled the ancient stock of trades delivered to their keeping."

5

The establishment of the Royal Society in 1660 and the Academy of Sciences in 1666 made physical science fashionable in London and Paris. Macaulay, in his characteristic way, describes how "dreams of perfect forms of government made way for dreams of wings with which men were to fly from the Tower to the Abbey, and of double-keeled ships which were never to founder in the fiercest storm. All classes were hurried along by the prevailing sentiment. Cavalier and Round-head, Churchman and Puritan were for once allied. Divines, jurists, statesmen, nobles, princes, swelled the triumph of the Baconian philosophy." The seeds sown by Bacon had at last begun to ripen, and full credit was given to him by those who founded and acclaimed the Royal Society. The ode which Cowley addressed to that institution might have been entitled an ode in honour of Bacon, or still better—for the poet seized the essential point of Bacon's labours—a hymn on the liberation of the human mind from the yoke of Authority.

Bacon has broke that scar-crow Deity.

Dryden himself, in the *Annus Mirabilis*, had turned aside from his subject, the defeat of the Dutch and England's mastery of the seas, to pay a compliment to the Society, and to prophesy man's mastery of the universe.

> Instructed ships shall sail to rich commerce,
> By which remotest regions are allied;
> Which makes one city of the universe,
> Where some may gain and all may be supplied.
>
> Then we upon our globe's last verge shall go,
> And view the ocean leaning on the sky,
> From thence our rolling neighbours we shall know,
> And on the lunar world securely pry.

Men did not look far into the future; they did not dream of what the world might be a thousand or ten thousand years hence. They seem to have expected quick results. Even Sprat thinks that "the absolute perfection of the true philosophy" is not far off, seeing that "this first great and necessary preparation for its coming"—the institution of scientific co-operation—has been accomplished. Superficial and transient though the popular enthusiasm was, it was a sign that an age of intellectual optimism had begun, in which the science of nature would play a leading *rôle*.

CHAPTER V

THE PROGRESS OF KNOWLEDGE: FONTENELLE

I

NINE months before the first part of Perrault's work appeared a younger and more brilliant man had formulated, in a short tract, the essential points of the doctrine of the progress of knowledge. It was Fontenelle.

Fontenelle was an *anima naturaliter moderna*. Trained in the principles of Descartes, he was one of those who, though like Descartes himself, too critical to swear by a master, appreciated unreservedly the value of the Cartesian method. Sometimes, he says, a great man gives the tone to his age; and this is true of Descartes, who can claim the glory of having established a new art of reasoning. He sees the effects in literature. The best books on moral and political subjects are distinguished by an arrangement and precision which he traces to the *esprit géométrique* characteristic of Descartes.[1] Fontenelle himself had this "geometrical mind," which we see at its best in Descartes and Hobbes and Spinoza.

He had indeed a considerable aptitude for letters.

[1] *Sur l'utilité des mathématiques et de la physique* (*Œuvres*, iii. p. 6, ed. 1729).

He wrote poor verses, and could not distinguish good poetry from bad. That perhaps was the defect of *l'esprit géométrique*. But he wrote lucid prose. There was an ironical side to his temper, and he had an ingenious paradoxical wit, which he indulged, with no little felicity, in his early work, *Dialogues of the Dead*. These conversations, though they show no dramatic power and are simply a vehicle for the author's satirical criticisms on life, are written with a light touch, and are full of surprises and unexpected turns. The very choice of the interlocutors shows a curious fancy, which we do not associate with the geometrical intellect. Descartes is confronted with the Third False Demetrius, and we wonder what the gourmet Apicius will find to say to Galileo.

2

In the *Dialogues of the Dead*, which appeared in 1683, the Ancient and Modern controversy is touched on more than once, and it is the subject of the conversation between Socrates and Montaigne. Socrates ironically professes to expect that the age of Montaigne will show a vast improvement on his own; that men will have profited by the experience of many centuries; and that the old age of the world will be wiser and better regulated than its youth. Montaigne assures him that it is not so, and that the vigorous types of antiquity, like Pericles, Aristides, and Socrates himself, are no longer to be found. To this assertion Socrates opposes the doctrine of the permanence of the forces of Nature. Nature has not degenerated in her other works; why should she cease to produce reasonable men?

He goes on to observe that antiquity is enlarged and exalted by distance: "In our own day we esteemed our ancestors more than they deserved, and now our posterity esteems us more than we deserve. There is really no difference between our ancestors, ourselves, and our posterity. *C'est toujours la même chose.*" But, objects Montaigne, I should have thought that things were always changing; that different ages had their different characters. Are there not ages of learning and ages of ignorance, rude ages and polite? True, replies Socrates, but these are only externalities. The heart of man does not change with the fashions of his life. The order of Nature remains constant (*l'ordre général de la Nature a l'air bien constant*).

This conclusion harmonises with the general spirit of the *Dialogues*. The permanence of the forces of Nature is asserted, but for the purpose of dismissing the whole controversy as rather futile. Elsewhere modern discoveries, like the circulation of the blood and the motions of the earth, are criticised as useless; adding nothing to the happiness and pleasures of mankind. Men acquired, at an early period, a certain amount of useful knowledge, to which they have added nothing; since then they have been slowly discovering things that are unnecessary. Nature has not been so unjust as to allow one age to enjoy more pleasures than another. And what is the value of civilisation? It moulds our words, and embarrasses our actions; it does not affect our feelings.[1]

One might hardly have expected the author of

[1] See the dialogues of Harvey with Erasistratus (a Greek physician of the third century B.C.); Galileo with Apicius; Montezuma with Fernando Cortez.

these *Dialogues* to come forward a few years later as a champion of the Moderns, even though, in the dedicatory epistle to Lucian, he compared France to Greece. But he was seriously interested in the debated question, as an intellectual problem, and in January 1688 he published his *Digression on the Ancients and Moderns*, a short pamphlet, but weightier and more suggestive than the large work of his friend Perrault, which began to appear nine months later.

3

The question of pre-eminence between the Ancients and Moderns is reducible to another. Were trees in ancient times greater than to-day? If they were, then Homer, Plato, and Demosthenes cannot be equalled in modern times; if they were not, they can.

Fontenelle states the problem in this succinct way at the beginning of the *Digression*. The permanence of the forces of Nature had been asserted by Saint Sorlin and Perrault; they had offered no proof, and had used the principle rather incidentally and by way of illustration. But the whole inquiry hinged on it. If it can be shown that man has not degenerated, the cause of the Moderns is practically won. The issue of the controversy must be decided not by rhetoric but by physics. And Fontenelle offers what he regards as a formal Cartesian proof of the permanence of natural forces.

If the Ancients had better intellects than ours, the brains of that age must have been better arranged, formed of firmer or more delicate fibres,

fuller of "animal spirits." But if such a difference existed, Nature must have been more vigorous; and in that case the trees must have profited by that superior vigour and have been larger and finer. The truth is that Nature has in her hands a certain paste which is always the same, which she is ever turning over and over again in a thousand ways, and of which she forms men, animals, and plants. She has not formed Homer, Demosthenes, and Plato of a finer or better kneaded clay than our poets, orators, and philosophers. Do not object that minds are not material. They are connected by a material bond with the brain, and it is the quality of this material bond that determines intellectual differences.

But although natural processes do not change from age to age, they differ in their effects in different climates. "It is certain that as a result of the reciprocal dependence which exists between all parts of the material world, differences of climate, which so clearly affect the life of plants, must also produce some effect on human brains." May it not be said then that, in consequence of climatic conditions, ancient Greece and Rome produced men of mental qualities different from those which could be produced in France? Oranges grow easily in Italy; it is more difficult to cultivate them in France. Fontenelle replies that art and cultivation exert a much greater influence on human brains than on the soil; ideas can be transported more easily from one country to another than plants; and as a consequence of commerce and mutual influence, peoples do not retain the original mental peculiarities due to climate. This may not be true of the

extreme climates in the torrid and glacial zones, but in the temperate zone we may discount entirely climatic influence. The climates of Greece and Italy and that of France are too similar to cause any sensible difference between the Greeks or Latins and the French.

Saint Sorlin and Perrault had argued directly from the permanence of vigour in lions or trees to the permanence of vigour in man. If trees are the same as ever, brains must also be the same. But what about the minor premiss? Who knows that trees are precisely the same? It is an indemonstrable assumption that oaks and beeches in the days of Socrates and Cicero were not slightly better trees than the oaks and beeches of to-day. Fontenelle saw the weakness of this reasoning. He saw that it was necessary to prove that the trees, no less than human brains, have not degenerated. But his *a priori* proof is simply a statement of the Cartesian principle of the stability of natural processes, which he put in a thoroughly unscientific form. The stability of the laws of nature is a necessary hypothesis, without which science would be impossible. But here it was put to an illegitimate use. For it means that, given precisely the same conditions, the same physical phenomena will occur. Fontenelle therefore was bound to show that conditions had not altered in such a way as to cause changes in the quality of nature's organic productions. He did not do this. He did not take into consideration, for instance, that climatic conditions may vary from age to age as well as from country to country.

4

Having established the natural equality of the Ancients and Moderns, Fontenelle inferred that whatever differences exist are due to external conditions—(1) time; (2) political institutions and the state of affairs in general.

The ancients were prior in time to us, therefore they were the authors of the first inventions. For that, they cannot be regarded as our superiors. If we had been in their place we should have been the inventors, like them; if they were in ours, they would add to those inventions, like us. There is no great mystery in that. We must impute equal merit to the early thinkers who showed the way and to the later thinkers who pursued it. If the ancient attempts to explain the universe have been recently replaced by the discovery of a simple system (the Cartesian), we must consider that the truth could only be reached by the elimination of false routes, and in this way the numbers of the Pythagoreans, the ideas of Plato, the qualities of Aristotle, all served indirectly to advance knowledge. "We are under an obligation to the ancients for having exhausted almost all the false theories that could be formed." Enlightened both by their true views and by their errors, it is not surprising that we should surpass them.

But all this applies only to scientific studies, like mathematics, physics, and medicine, which depend partly on correct reasoning and partly on experience. Methods of reasoning improve slowly, and the most important advance which has been

made in the present age is the method inaugurated by Descartes. Before him reasoning was loose; he introduced a more rigid and precise standard, and its influence is not only manifest in our best works on physics and philosophy, but is even discernible in books on ethics and religion.

We must expect posterity to excel us as we excel the Ancients, through improvement of method, which is a science in itself—the most difficult and least studied of all—and through increase of experience. Evidently the process is endless (*il est évident que tout cela n'a point de fin*), and the latest men of science must be the most competent.

But this does not apply to poetry or eloquence, round which the controversy has most violently raged. For poetry and eloquence do not depend on correct reasoning. They depend principally on vivacity of imagination, and "vivacity of imagination does not require a long course of experiments, or a great multitude of rules, to attain all the perfection of which it is capable." Such perfection might be attained in a few centuries. If the ancients did achieve perfection in imaginative literature, it follows that they cannot be surpassed; but we have no right to say, as their admirers are fond of pretending, that they cannot be equalled.

5

Besides the mere nature of time, we have to take into account external circumstances in considering this question.

If the forces of nature are permanent, how are we to explain the fact that in the barbarous centuries after the decline of Rome—the term Middle Ages

has not yet come into currency—ignorance was so dense and deep? This breach of continuity is one of the plausible arguments of the advocates of the Ancients. Those ages, they say, were ignorant and barbarous because the Greek and Latin writers had ceased to be read; as soon as the study of the classical models revived there was a renaissance of reason and good taste. That is true, but it proves nothing. Nature never forgot how to mould the head of Cicero or Livy. She produces in every age men who might be great men; but the age does not always allow them to exert their talents. Inundations of barbarians, universal wars, governments which discourage or do not favour science and art, prejudices which assume all variety of shapes —like the Chinese prejudice against dissecting corpses—may impose long periods of ignorance or bad taste.

But observe that, though the return to the study of the ancients revived, as at one stroke, the aesthetic ideals which they had created and the learning which they had accumulated, yet even if their works had not been preserved we should, though it would have cost us many long years of labour, have discovered for ourselves "ideas of the true and the beautiful." Where should we have found them? Where the ancients themselves found them, after much groping.

6

The comparison of the life of collective humanity to the life of a single man, which had been drawn by Bacon and Pascal, Saint Sorlin and Perrault, contains or illustrates an important truth which

bears on the whole question. Fontenelle puts it thus. An educated mind is, as it were, composed of all the minds of preceding ages; we might say that a single mind was being educated throughout all history. Thus this secular man, who has lived since the beginning of the world, has had his infancy in which he was absorbed by the most urgent needs of life; his youth in which he succeeded pretty well in things of imagination like poetry and eloquence, and even began to reason, but with more courage than solidity. He is now in the age of manhood, is more enlightened, and reasons better; but he would have advanced further if the passion for war had not distracted him and given him a distaste for the sciences to which he has at last returned.

Figures, if they are pressed, are dangerous; they suggest unwarrantable conclusions. It may be illuminative to liken the development of humanity to the growth of an individual; but to infer that the human race is now in its old age, merely on the strength of the comparison, is obviously unjustifiable. That is what Bacon and the others had done. The fallacy was pointed out by Fontenelle.

From his point of view, an "old age" of humanity, which if it meant anything meant decay as well as the wisdom of experience, was contrary to the principle of the permanence of natural forces. Man, he asserts, will have no old age. He will be always equally capable of achieving the successes of his youth; and he will become more and more expert in the things which become the age of virility. Or "to drop metaphor, men will never degenerate."

In ages to come we may be regarded—say in America—with the same excess of admiration with which we regard the ancients. We might push the prediction further. In still later ages the interval of time which divides us from the Greeks and Romans will appear so relatively small to posterity that they will classify us and the ancients as virtually contemporary; just in the same way as we group together the Greeks and Romans, though the Romans in their own day were moderns in relation to the Greeks. In that remote period men will be able to judge without prejudice the comparative merits of Sophocles and Corneille.

Unreasonable admiration for the ancients is one of the chief obstacles to progress (*le progrès des choses*). Philosophy not only did not advance, but even fell into an abyss of unintelligible ideas, because, through devotion to the authority of Aristotle, men sought truth in his enigmatic writings instead of seeking it in nature. If the authority of Descartes were ever to have the same fortune, the results would be no less disastrous.

7

This memorable brochure exhibits, without pedantry, perspicuous arrangement and the "geometrical" precision on which Fontenelle remarked as one of the notes of the new epoch introduced by Descartes. It displays too the author's open-mindedness, and his readiness to follow where the argument leads. He is able already to look beyond Cartesianism; he knows that it cannot be final. No man of his time was more open-minded and free from prejudice than Fontenelle. This quality

of mind helped him to turn his eyes to the future. Perrault and his predecessors were absorbed in the interest of the present and the past. Descartes was too much engaged in his own original discoveries to do more than throw a passing glance at posterity.

Now the prospect of the future was one of the two elements which were still needed to fashion the theory of the progress of knowledge. All the conditions for such a theory were present. Bodin and Bacon, Descartes and the champions of the Moderns—the reaction against the Renaissance, and the startling discoveries of science — had prepared the way; progress was established for the past and present. But the theory of the progress of knowledge includes and acquires its value by including the indefinite future. This step was taken by Fontenelle. The idea had been almost excluded by Bacon's misleading metaphor of old age, which Fontenelle expressly rejects. Man will have no old age; his intellect will never degenerate; and "the sound views of intellectual men in successive generations will continually add up."

But progress must not only be conceived as extending indefinitely into the future; it must also be conceived as necessary and certain. This is the second essential feature of the theory. The theory would have little value or significance, if the prospect of progress in the future depended on chance or the unpredictable discretion of an external will. Fontenelle asserts implicitly the certainty of progress when he declares that the discoveries and improvements of the modern age would have been made by the ancients if they exchanged places with

the moderns; for this amounts to saying that science will progress and knowledge increase independently of particular individuals. If Descartes had not been born, some one else would have done his work; and there could have been no Descartes before the seventeenth century. For, as he says in a later work,[1] "there is an order which regulates our progress. Every science develops after a certain number of preceding sciences have developed, and only then; it has to await its turn to burst its shell."

Fontenelle, then, was the first to formulate the idea of the progress of knowledge as a complete doctrine. At the moment the import and far-reaching effects of the idea were not realised, either by himself or by others, and his pamphlet, which appeared in the company of a perverse theory of pastoral poetry, was acclaimed merely as an able defence of the Moderns.

8

If the theory of the indefinite progress of knowledge is true, it is one of those truths which were originally established by false reasoning. It was established on a principle which excluded degeneration, but equally excluded evolution; and the whole conception of nature which Fontenelle had learned from Descartes is long since dead and buried.

But it is more important to observe that this principle, which seemed to secure the indefinite progress of knowledge, disabled Fontenelle from suggesting a theory of the progress of society.

[1] *Préface des élémens de la géométrie de l'infini* (*Œuvres*, x. p. 40, ed. 1790).

The invariability of nature, as he conceived it, was true of the emotions and the will, as well as of the intellect. It implied that man himself would be psychically always the same—unalterable, incurable. *L'ordre général de la Nature a l'air bien constant.* His opinion of the human race was expressed in the *Dialogues of the Dead*,[1] and it never seems to have varied. The world consists of a multitude of fools, and a mere handful of reasonable men. Men's passions will always be the same and will produce wars in the future as in the past. Civilisation makes no difference; it is little more than a veneer.

Even if theory had not stood in his way, Fontenelle was the last man who was likely to dream dreams of social improvement. He was temperamentally an Epicurean, of the same refined stamp as Epicurus himself, and he enjoyed throughout his long life—he lived to the age of a hundred—the tranquillity which was the true Epicurean ideal. He was never troubled by domestic cares, and his own modest ambition was satisfied when, at the age of forty, he was appointed permanent Secretary of the Academy of Sciences. He was not the man to let his mind dwell on the woes and evils of the world; and the follies and perversities which cause them interested him only so far as they provided material for his wit.

It remains, however, noteworthy that the author of the theory of the progress of knowledge, which was afterwards to expand into a general theory of human Progress, would not have allowed that this extension was legitimate; though it was through

[1] It may be seen too in the *Plurality of Worlds*.

this extension that Fontenelle's idea acquired human value and interest and became a force in the world.

9

Fontenelle did a good deal more than formulate the idea. He reinforced it by showing that the prospect of a steady and rapid increase of knowledge in the future was certified.

The postulate of the immutability of the laws of nature, which has been the indispensable basis for the advance of modern science, is fundamental with Descartes. But Descartes did not explicitly insist on it, and it was Fontenelle, perhaps more than any one else, who made it current coin. That was a service performed by the disciple; but he seems to have been original in introducing the fruitful idea of the sciences as confederate and intimately interconnected[1]; not forming a number of isolated domains, as hitherto, but constituting a system in which the advance of one will contribute to the advance of the others. He exposed with masterly ability the reciprocal relations of physics and mathematics. No man of his day had a more comprehensive view of all the sciences, though he made no original contributions to any. His curiosity was universal, and as Secretary of the Academy he was obliged, according to his own high standard of his duty, to keep abreast of all that was being done in every branch of knowledge. That was possible then; it would be impossible now.

In the famous series of obituary discourses which he delivered on savants who were members

[1] Roger Bacon, as we saw, had a glimpse of this principle.

of the Academy, Fontenelle probably thought that he was contributing to the realisation of this ideal of "solidarity," for they amounted to a chronicle of scientific progress in every department. They are free from technicalities and extraordinarily lucid, and they appealed not only to men of science, but to those of the educated public who possessed some scientific curiosity. This brings us to another important *rôle* of Fontenelle—the *rôle* of interpreter of the world of science to the world outside. It is closely related to our subject.

For the popularisation of science, which was to be one of the features of the nineteenth century, was in fact a condition of the success of the idea of Progress. That idea could not insinuate itself into the public mind and become a living force in civilised societies until the meaning and value of science had been generally grasped, and the results of scientific discovery had been more or less diffused. The achievements of physical science did more than anything else to convert the imaginations of men to the general doctrine of Progress.

Before the later part of the seventeenth century, the remarkable physical discoveries of recent date had hardly escaped beyond academic circles. But an interest in these subjects began to become the fashion in the later years of Louis XIV. Science was talked in the salons; ladies studied mechanics and anatomy. Molière's play, *Les Femmes savantes*, which appeared in 1672, is one of the first indications. In 1686 Fontenelle published his *Conversations on the Plurality of Worlds*, in which a savant explains the new astronomy to a lady in the park of

a country house. It is the first book—at least the first that has any claim to be remembered—in the literature of popular science, and it is one of the most striking. It met with the success which it deserved. It was reprinted again and again, and it was almost immediately translated into English.

The significance of the *Plurality of Worlds* is indeed much greater than that of a pioneer work in popularisation and a model in the art of making technical subjects interesting. We must remember that at this time the belief that the sun revolves round the earth still prevailed. Only the few knew better. The cosmic revolution which is associated with the names of Copernicus, Kepler, and Galileo was slow in producing its effects. It was rejected by Bacon; and the condemnation of Galileo by the Church made Descartes, who dreaded nothing so much as a collision with the ecclesiastical authorities, unwilling to insist on it.[1] Milton's Raphael, in the Eighth Book of *Paradise Lost* (published 1667), does not venture to affirm the Copernican system; he explains it sympathetically, but leaves the question open.[2] Fontenelle's book was an event. It disclosed to the general public a new picture of the universe, to which men would have to accustom their imaginations.

We may perhaps best conceive all that this change meant by supposing what a difference it

[1] Cp. Bouillier, *Histoire de la philosophie cartésienne*, i. p. 42-3.

[2] Masson (*Milton's Poetical Works*, vol. 2) observes that Milton's life (1608–74) "coincides with the period of the struggle between the two systems" (p. 90). Milton's friends, the Smectymnians, in answer to Bishop Hall's *Humble Remonstrance* (1641), "had cited the Copernican doctrine as an unquestionable instance of a supreme absurdity." Masson has some apposite remarks on the influence of the Ptolemaic system "upon the thinkings and imaginations of mankind everywhere on all subjects whatsoever till about two hundred years ago."

would make to us if it were suddenly discovered that the old system which Copernicus upset was true after all, and that we had to think ourselves back into a strictly limited universe of which the earth is the centre. The loss of its privileged position by our own planet; its degradation, from a cosmic point of view, to insignificance; the necessity of admitting the probability that there may be many other inhabited worlds—all this had consequences ranging beyond the field of astronomy. It was as if a man who dreamed that he was living in Paris or London should awake to discover that he was really in an obscure island in the Pacific Ocean, and that the Pacific Ocean was immeasurably vaster than he had imagined. The Marquise, in the *Plurality of Worlds*, reacts to the startling illumination: "Voilà l'univers si grand que je m'y perds, je ne sais plus où je suis; je ne suis plus rien.—La terre est si effroyablement petite!"

Such a revolution in cosmic values could not fail to exert a penetrating influence on human thought. The privileged position of the earth had been a capital feature of the whole doctrine, as to the universe and man's destinies, which had been taught by the Church, and it had made that doctrine more specious than it might otherwise have seemed. Though the Churches could reform their teaching to meet the new situation, the fact remained that the Christian scheme sounded less plausible when the central importance of the human race was shown to be an illusion. Would man, stripped of his cosmic pretensions, and finding himself lost in the immensities of space, invent a more modest theory of his destinies confined to his own little earth—*si*

effroyablement petite? The eighteenth century answered this question by the theory of Progress.

10

Fontenelle is one of the most representative thinkers of that period—we have no distinguishing name for it—which lies between the characteristic thinkers of the seventeenth century and the characteristic thinkers of the eighteenth. It is a period of over sixty years, beginning about 1680; for though Montesquieu and Voltaire were writing long before 1740, the great influential works of the "age of illumination" begin with the *Esprit des lois* in 1748. The intellectual task of this intervening period was to turn to account the ideas provided by the philosophy of Descartes, and use them as solvents of the ideas handed down from the Middle Ages. We might almost call it the Cartesian period; for, though Descartes was dead, it was in these years that Cartesianism performed its task and transformed human thought.

When we speak of Cartesianism we do not mean the metaphysical system of the master, or any of his particular views such as that of innate ideas. We mean the general principles, which were to leave an abiding impression on the texture of thought: the supremacy of reason over authority, the stability of the laws of Nature, rigorous standards of proof. Fontenelle was far from accepting all the views of Descartes, whom he does not scruple to criticise; but he was a true Cartesian in the sense that he was deeply imbued with these principles, which generated, to use an expression of his own,

"des espèces de rebelles, qui conspiraient contre l'ignorance et les préjugés dominants."[1] And of all these rebels against ruling prejudices he probably did more than any single man to exhibit the consequences of the Cartesian ideas and drive them home.

The *Plurality of Worlds* was a contribution to the task of transforming thought and abolishing ancient error; but the *History of Oracles* which appeared in the following year was more characteristic. It was a free adaptation of an unreadable Latin treatise by a Dutchman, which in Fontenelle's skilful hands becomes a vehicle for applying Cartesian solvents to theological authority. The thesis is that the Greek oracles were a sacerdotal imposture, and not, as ecclesiastical tradition said, the work of evil spirits, who were stricken silent at the death of Jesus Christ. The effect was to discredit the authority of the early Fathers of the Church, though the writer has the discretion to repudiate such an intention. For the publication was risky; and twenty years later a Jesuit Father wrote a treatise to confute it, and exposed the secret poison, with consequences which might have been disastrous for Fontenelle if he had not had powerful friends among the Jesuits themselves. Fontenelle had none of the impetuosity of Voltaire, and after the publication of the *History of Oracles* he confined his criticism of tradition to the field of science. He was convinced that "les choses fort établies ne peuvent être attaquées que par degrez."[2]

The secret poison, of which Fontenelle prepared this remarkable dose with a touch which reminds us

[1] *Éloge de M. Lémery.* [2] *Éloge de M. Lémery.*

of Voltaire, was being administered in the same Cartesian period, and with similar precautions, by Bayle. Like Fontenelle, this great sceptic, "the father of modern incredulity" as he was called by Joseph de Maistre, stood between the two centuries and belonged to both. Like Fontenelle, he took a gloomy view of humanity; he had no faith in that goodness of human nature which was to be a characteristic dogma of the age of illumination. But he was untouched by the discoveries of science; he took no interest in Galileo or Newton; and while the most important work of Fontenelle was the interpretation of the positive advances of knowledge, Bayle's was entirely subversive.

The principle of unchangeable laws in nature is intimately connected with the growth of Deism which is a note of this period. The function of the Deity was virtually confined to originating the machine of nature, which, once regulated, was set beyond any further interference on His part, though His existence might be necessary for its conservation. A view so sharply opposed to the current belief could not have made way as it did without a penetrating criticism of the current theology. Such criticism was performed by Bayle. His works were a school for rationalism for about seventy years. He supplied to the thinkers of the eighteenth century, English as well as French, a magazine of subversive arguments, and he helped to emancipate morality both from theology and from metaphysics.

This intellectual revolutionary movement, which was propagated in *salons* as well as by books, shook the doctrine of Providence which Bossuet had so eloquently expounded. It meant the en-

thronement of reason—Cartesian reason—before whose severe tribunal history as well as opinions were tried. New rules of criticism were introduced, new standards of proof. When Fontenelle observed that the existence of Alexander the Great could not be strictly demonstrated and was no more than highly probable,[1] it was an undesigned warning that tradition would receive short shrift at the hands of men trained in analytical Cartesian methods.

II

That the issue between the claims of antiquity and the modern age should have been debated independently in England and France indicates that the controversy was an inevitable incident in the liberation of the human spirit from the authority of the ancients. Towards the end of the century the debate in France aroused attention in England and led to a literary quarrel, less important but not less acrimonious than that which raged in France. Sir William Temple's *Essay*, Wotton's *Reflexions*, and Swift's satire the *Battle of the Books* are the three outstanding works in the episode, which is however chiefly remembered on account of its connection with Bentley's masterly exposure of the fabricated letters of Phalaris.

The literary debate in France, indeed, could not have failed to reverberate across the Channel; for never perhaps did the literary world in England follow with more interest, or appreciate more keenly the productions of the great French writers of the time. In describing Will's coffee-house,

[1] *Pluralité des mondes*, sixième soir.

which was frequented by Dryden and all who pretended to be interested in polite letters, Macaulay says, "there was a faction for Perrault and the moderns, a faction for Boileau and the ancients." In the discussions on this subject a remarkable Frenchman who had long lived in England as an exile, M. de Saint Évremond, must have constantly taken part. The disjointed pieces of which Saint Évremond's writings consist are tedious and superficial, but they reveal a mind of much cultivation and considerable common sense. His judgement on Perrault's *Parallel* is that the author "has discovered the defects of the ancients better than he has made out the advantage of the moderns; his book is good and capable of curing us of abundance of errors." He was not a partisan. But his friend, Sir William Temple, excited by the French depreciations of antiquity, rushed into the lists with greater courage than discretion.

Temple was ill equipped for the controversy, though his *Essay on Ancient and Modern Learning* (1690) is far from deserving the disdain of Macaulay, who describes its matter as "ludicrous and contemptible to the last degree."[1] And it must be confessed that the most useful result of the *Essay* was the answer which it provoked from

[1] The only point in it which need be noted here is that the author questioned the cogency of Fontenelle's argument, that the forces of nature being permanent human ability is in all ages the same. "May there not," he asks, "many circumstances concur to one production that do not to any other in one or many ages?" Fontenelle speaks of trees. It is conceivable that various conditions and accidents "may produce an oak, a fig, or a plane-tree, that shall deserve to be renowned in story, and shall not perhaps be paralleled in other countries or times. May not the same have happened in the production, growth, and size of wit and genius in the world, or in some parts or ages of it, and from many more circumstances that contributed towards it than what may concur to the stupendous growth of a tree or animal?"

Wotton. For Wotton had a far wider range of knowledge, and a more judicious mind, than any of the other controversialists, with the exception of Fontenelle; and in knowledge of antiquity he was Fontenelle's superior. His inquiry stands out as the most sensible and unprejudiced contribution to the whole debate. He accepts as just the reasoning of Fontenelle "as to the comparative force of the geniuses of men in the several ages of the world and of the equal force of men's understandings absolutely considered in all times since learning first began to be cultivated amongst mankind." But this is not incompatible with the thesis that in some branches the ancients excelled all who came after them. For it is not necessary to explain such excellence by the hypothesis that there was a particular force of genius evidently discernible in former ages, but extinct long since, and that nature is now worn out and spent. There is an alternative explanation. There may have been special circumstances "which might suit with those ages which did exceed ours, and with those things wherein they did exceed us, and with no other age nor thing besides."

But we must begin our inquiry by sharply distinguishing two fields of mental activity—the field of art, including poetry, oratory, architecture, painting, and statuary; and the field of knowledge, including mathematics, natural science, physiology, with all their dependencies. In the case of the first group there is room for variety of opinion; but the superiority of the Greeks and Romans in poetry and literary style may be admitted without prejudice to the mental equality of the moderns,

for it may be explained partly by the genius of their languages and partly by political circumstances—for example, in the case of oratory,[1] by the practical necessity of eloquence. But as regards the other group, knowledge is not a matter of opinion or taste, and a definite judgement is possible. Wotton then proceeds to review systematically the field of science, and easily shows, with more completeness and precision than Perrault, the superiority of modern methods and the enormous strides which had been made.

As to the future, Wotton expresses himself cautiously. It is not easy to say whether knowledge will advance in the next age proportionally to its advance in this. He has some fears that there may be a falling away, because ancient learning has still too great a hold over modern books, and physical and mathematical studies tend to be neglected. But he ends his *Reflexions* by the speculation that "some future age, though perhaps not the next, and in a country now possibly little thought of, may do that which our great men would be glad to see done; that is to say, may raise real knowledge, upon foundations laid in this age, to the utmost possible perfection to which it may be brought by mortal men in this imperfect state."

The distinction, on which Wotton insisted, between the sciences which require ages for their development and the imaginative arts which may reach perfection in a short time had been recognised by Fontenelle, whose argument on this point differs from that of his friend Perrault. For Perrault contended that in literature and art, as well as in

[1] This had been noted by Fontenelle in his *Digression*.

science, later generations can, through the advantage of time and longer experience, attain to a higher excellence than their predecessors. Fontenelle, on the other hand, held that poetry and eloquence have a restricted field, and that therefore there must be a time at which they reach a point of excellence which cannot be exceeded. It was his personal opinion that eloquence and history actually reached the highest possible perfection in Cicero and Livy.

But neither Fontenelle nor Wotton came into close quarters with the problem which was raised—not very clearly, it is true—by Perrault. Is there development in the various species of literature and art? Do they profit and enrich themselves by the general advance of civilisation? Perrault, as we have seen, threw out the suggestion that increased experience and psychological study enabled the moderns to penetrate more deeply into the recesses of the human soul, and therefore to bring to a higher perfection the treatment of the character, motives, and passions of men. This suggestion admits of being extended. In the Introduction to his *Revolt of Islam*, Shelley, describing his own intellectual and aesthetic experiences, writes:

> The poetry of ancient Greece and Rome, and modern Italy, and our own country, has been to me like external nature, a passion and an enjoyment. . . . I have considered poetry in its most comprehensive sense; and have read the poets and the historians and the metaphysicians whose writings have been accessible to me—and have looked upon the beautiful and majestic scenery of the earth—as common sources of those elements which it is the province of the Poet to embody and combine.

And he appends a note:

> In this sense there may be such a thing as perfectibility in works of fiction, notwithstanding the concession often made by the advocates of human improvement, that perfectibility is a term applicable only to science.

In other words, all the increases of human experience, from age to age, all the speculative adventures of the intellect, provide the artist, in each succeeding generation, with more abundant sources for aesthetic treatment. As years go on, life in its widest sense offers more and more materials "which it is the province of the Poet to embody and combine." This is evidently true; and would it not seem to follow that literature is not excluded from participating in the common development of civilisation? One of the latest of the champions of the Moderns, the Abbé Terrasson, maintained that "to separate the general view of the progress of the human mind in regard to natural science, and in regard to *belles-lettres*, would be a fitting expedient to a man who had two souls, but it is useless to him who has only one." He put the matter in too abstract a way to carry conviction; but the nineteenth century was to judge that he was not entirely wrong. For the question was, as we shall see, raised anew by Madame de Staël, and the theory was finally to emerge that art and literature, like laws and institutions, are an expression of society and therefore inextricably linked with the other elements of social development—a theory, it may be observed, which while it has discredited the habit of considering works of art in a vacuum, dateless and detached,

as they were generally considered by critics of the seventeenth century, leaves the aesthetic problem much where it was.

Perrault's suggestion as to the enrichment of the material of the artist by new acquisitions would have served to bring literature and art into the general field of human development, without compromising the distinction on which Wotton and others insisted between the natural sciences and the aesthetic arts. But that distinction, emphatically endorsed by Voltaire, had the effect of excluding literature and art from the view of those who in the eighteenth century recognised progress in the other activities of man.

12

It is notable that in this literary controversy the Moderns, even Fontenelle, seem curiously negligent of the import of the theory which they were propounding of the intellectual progress of man. They treat it almost incidentally, as part of the case for the defence, not as an immensely important conclusion. Its bearings were more definitely realised by the Abbé Terrasson, whom I have just named. A geometer and a Cartesian, he took part in the controversy in its latest stage, when La Motte and Madame Dacier were the principal antagonists. The human mind, he said, has had its infancy and youth; its maturity began in the age of Augustus; the barbarians arrested its course till the Renaissance; in the seventeenth century, through the illuminating philosophy of Descartes, it passed beyond the stage which it had attained in the Augustan age, and the eighteenth century should

surpass the seventeenth. Cartesianism is not final; it has its place in a development. It was made possible by previous speculations, and it will be succeeded by other systems. We must not pursue the analogy of humanity with an individual man and anticipate a period of old age. For unlike the individual, humanity "being composed of all ages," is always gaining instead of losing. The age of maturity will last indefinitely, because it is a progressive, not a stationary, maturity. Later generations will always be superior to the earlier, for progress is "a natural and necessary effect of the constitution of the human mind."

CHAPTER VI

THE GENERAL PROGRESS OF MAN: ABBÉ DE SAINT-PIERRE

THE revolutionary speculations on the social and moral condition of man which were the outstanding feature of the eighteenth century in France, and began about 1750, were the development of the intellectual movement of the seventeenth, which had changed the outlook of speculative thought. It was one continuous rationalistic movement. In the days of Racine and Perrault men had been complacently conscious of the enlightenment of the age in which they were living, and as time went on, this consciousness became stronger and acuter; it is a note of the age of Voltaire. In the last years of Louis XIV., and in the years which followed, the contrast between this mental enlightenment and the dark background—the social evils and miseries of the kingdom, the gross misgovernment and oppression—began to insinuate itself into men's minds. What was the value of the achievements of science, and the improvement of the arts of life, if life itself could not be ameliorated? Was not some radical reconstruction possible in the social fabric, corresponding to the radical reconstruction inaugurated by Descartes in the principles of science and in the methods of thought? Year by year the

obscurantism of the ruling powers became more glaring, and the most gifted thinkers, towards the middle of the century, began to concentrate their brains on the problems of social science and to turn the light of reason on the nature of man and the roots of society. They wrought with unscrupulous resolution and with far-reaching effects.

With the extension of rationalism into the social domain, it came about naturally that the idea of intellectual progress was enlarged into the idea of the general Progress of man. The transition was easy. If it could be proved that social evils were due neither to innate and incorrigible disabilities of the human being nor to the nature of things, but simply to ignorance and prejudices, then the improvement of his state, and ultimately the attainment of felicity, would be only a matter of illuminating ignorance and removing errors, of increasing knowledge and diffusing light. The growth of the "universal human reason"—a Cartesian phrase, which had figured in the philosophy of Malebranche—must assure a happy destiny to humanity.

Between 1690 and 1740 the conception of an indefinite progress of enlightenment had been making its way in French intellectual circles, and must often have been a topic of discussion in the *salons*, for instance, of Madame de Lambert, Madame de Tencin, and Madame Dupin, where Fontenelle was one of the most conspicuous guests. To the same circle belonged his friend the Abbé de Saint-Pierre, and it is in his writings that we first find the theory widened in its compass to embrace progress towards social perfection.[1]

[1] For his life and works the best book is J. Drouet's monograph, *L'Abbé*

I

He was brought up on Cartesian principles, and he idealised Descartes somewhat as Lucretius idealised Epicurus. But he had no aptitude for philosophy, and he prized physical science only as far as it directly administered to the happiness of men. He was a natural utilitarian, and perhaps no one was ever more consistent in making utility the criterion of all actions and theories. Applying this standard he obliterated from the roll of great men most of those whom common opinion places among the greatest. Alexander, Julius Caesar, Charlemagne receive short shrift from the Abbé de Saint-Pierre.[1] He was superficial in his knowledge both of history and of science, and his conception of utility was narrow and a little vulgar. Great theoretical discoverers like Newton and Leibnitz he sets in a lower rank than ingenious persons who used their scientific skill to fashion some small convenience of life. Monuments of art, like *Notre Dame*, possessed little value in his eyes compared with a road, a bridge, or a canal.

Like most of his distinguished contemporaries he was a Deist. On his deathbed he received the usual rites of the Church in the presence of his household, and then told the priest that he did not believe a word of all that. His real views are transparent in some of his works through the conventional disguises in which prudent writers of the time were

de Saint-Pierre: *l'homme et l'œuvre* (1912), but on some points Goumy's older study (1859) is still worth consulting. I have used the edition of his works in 12 volumes published during his lifetime at Rotterdam, 1733–37.

[1] Compare Voltaire, *Lettres sur les Anglais*, xii., where Newton is acclaimed as the greatest man who ever lived.

wont to wrap their assaults on orthodoxy. To attack Mohammedanism by arguments which are equally applicable to Christianity was a device for propagating rationalism in days when it was dangerous to propagate it openly. This is what the Abbé did in his *Discourse against Mohammedanism.* Again, in his *Physical Explanation of an Apparition* he remarks: "To diminish our fanatical proclivities, it would be useful if the Government were to establish an annual prize, to be awarded by the Academy of Sciences, for the best explanation, by natural laws, of the extraordinary effects of imagination, of the prodigies related in Greek and Latin literature, and of the pretended miracles told by Protestants, Schismatics, and Mohammedans." The author carefully keeps on the right side of the fence. No Catholic authorities could take exception to this. But no intelligent reader could fail to see that all miracles were attacked. The miracles accepted by the Protestants were also believed in by the Catholics.

He was one of the remarkable figures of his age. We might almost say that he was a new type—a nineteenth century humanitarian and pacifist in an eighteenth century environment. He was a born reformer, and he devoted his life to the construction of schemes for increasing human happiness. He introduced the word *bienfaisance* into the currency of the French language, and beneficence was in his eyes the sovran virtue. There were few departments of public affairs in which he did not point out the deficiencies and devise ingenious plans for improvement. Most of his numerous writings are *projets* — schemes of reform in government,

economics, finance, education, all worked out in detail, and all aiming at the increase of pleasure and the diminution of pain. The Abbé's nimble intelligence had a weak side, which must have somewhat compromised his influence. He was so confident in the reasonableness of his projects that he always believed that if they were fairly considered the ruling powers could not fail to adopt them in their own interests. It is the nature of a reformer to be sanguine, but the optimism of Saint-Pierre touched *naïveté*. Thousands might have agreed with his view that the celibacy of the Catholic clergy was an unwholesome institution, but when he drew up a proposal for its abolition and imagined that the Pope, unable to resist his arguments, would immediately adopt it, they might be excused for putting him down as a crank who could hardly be taken seriously. The form in which he put forward his memorable scheme for the abolition of war exhibits the same sanguine simplicity. All his plans, Rousseau observed, showed a clear vision of what their effects would be, "but he judged like a child of means to bring them about." But his abilities were great, and his actual influence was considerable. It would have been greater if he had possessed the gift of style.

2

He was not the first to plan a definite scheme for establishing a perpetual peace. Long ago Émeric Cruce had given to the world a proposal for a universal league, including not only the Christian nations of Europe, but the Turks, Persians, and Tartars, which by means of a court of arbitration sitting at Venice

should ensure the settlement of all disputes by peaceful means.[1] The consequence of universal peace, he said, will be the arrival of "that beautiful century which the ancient theologians promise after there have rolled by six thousand years. For they say that then the world will live happily and in repose. Now it happens that that time has nearly expired, and even if it is not, it depends only on the Princes to give beforehand this happiness to their peoples." Later in the century, others had ventilated similar projects in obscure publications, but the Abbé does not refer to any of his predecessors.

He was not blinded by the superficial brilliancy of the reign of Louis XIV. to the general misery which the ambitious war-policy of that sovran brought both upon France and upon her enemies. His *Annales politiques* are a useful correction to the *Siècle de Louis Quatorze*. It was in the course of the great struggle of the Spanish Succession that he turned his attention to war and came to the conclusion that it is an unnecessary evil and even an absurdity. In 1712 he attended the congress at Utrecht in the capacity of secretary to Cardinal de Polignac, one of the French delegates. His experiences there confirmed his optimistic mind in the persuasion that perpetual peace was an aim which might readily be realised; and in the following year he published the memoir which he had been preparing, in two volumes, to which he added a third four years later.

Though he appears not to have known the work of Cruce he did not claim originality. He sheltered

[1] *Le Nouveau Cynée* (Paris, 1623). It has recently been reprinted with an English translation by T. W. Balch, Philadelphia (1909).

his proposal under an august name, entitling it *Project of Henry the Great to render Peace Perpetual, explained by the Abbé de Saint-Pierre.* The reference is to the "great design" ascribed to Henry IV. by Sully, and aimed at the abasement of the power of Austria: a federation of the Christian States of Europe arranged in groups and under a sovran Diet, which would regulate international affairs and arbitrate in all quarrels.[1] Saint-Pierre, ignoring the fact that Sully's object was to eliminate a rival power, made it the text for his own scheme of a perpetual alliance of all the sovrans of Europe to guarantee to one another the preservation of their states and to renounce war as a means of settling their differences. He drew up the terms of such an alliance, and taking the European powers one by one demonstrated that it was the plain interest of each to sign the articles. Once the articles were signed the golden age would begin.

It is not to our present purpose to comment on this plan which the author with his characteristic simplicity seriously pressed upon the attention of statesmen. It is easy to criticise it in the light of subsequent history, and to see that, if the impossible had happened and the experiment had been tried and succeeded, it might have caused more suffering than all the wars from that day to this. For it was based on a perpetuation of the political *status quo* in Europe. It assumed that the existing political distribution of power was perfectly satisfactory and conformable to the best interests of all the peoples concerned. It would have hindered the Partition of Poland, but it would have maintained the Austrian

[1] It is described in Sully's *Mémoires*, Book XXX.

oppression of Italians. The project also secured to the sovrans the heritage of their authority and guarded against civil wars. This assumed that the various existing contributions were fundamentally just. The realisation of the scheme would have perpetuated all the evils of autocratic governments. Its author did not perceive that the radical evil in France was irresponsible power. It needed the reign of Louis XV. and the failure of attempts at reform under his successor to bring this home. The Abbé even thought that an increase of the despotic authority of the government was desirable, provided this were accompanied by an increase in the enlightenment and virtue of its ministers.

In 1729 he published an abridgment of his scheme, and here he looks beyond its immediate results to its value for distant posterity. No one, he says, can imagine or foresee the advantages which such an alliance of European states will yield to Europe five hundred years after its establishment. Now we can see the first beginnings, but it is beyond the powers of the human mind to discern its infinite effects in the future. It may produce results more precious than anything hitherto experienced by man. He supports his argument by observing that our primitive ancestors could not foresee the improvements which the course of ages would bring in their rudimentary arrangements for securing social order.

3

It is characteristic that the Abbé de Saint-Pierre's ideas about Progress were a by-product of his particular schemes. In 1773 he published a *Project to Perfect the Government of States*, and here he

sketched his view of the progressive course of civilisation. The old legend of the golden age, when men were perfectly happy, succeeded by the ages of silver, bronze, and iron, exactly reverses the truth of history. The age of iron came first, the infancy of society, when men were poor and ignorant of the arts; it is the present condition of the savages of Africa and America. The age of bronze ensued, in which there was more security, better laws, and the invention of the most necessary arts began. There followed the age of silver, and Europe has not yet emerged from it. Our reason has indeed reached the point of considering how war may be abolished, and is thus approaching the golden age of the future; but the art of government and the general regulation of society, notwithstanding all the improvements of the past, is still in its infancy. Yet all that is needed is a short series of wise reigns in our European states to reach the age of gold or, in other words, a paradise on earth.

A few wise reigns. The Abbé shared the illusion of many that government is omnipotent and can bestow happiness on men. The imperfections of governments were, he was convinced, chiefly due to the fact that hitherto the ablest intellects had not been dedicated to the study of the science of governing. The most essential part of his project was the formation of a Political Academy which should do for politics what the Academy of Sciences did for the study of nature, and should act as an advisory body to ministers of state on all questions of the public welfare. If this proposal and some others were adopted, he believed that the golden age would not long be delayed.

These observations—hardly more than *obiter dicta*—show that Saint-Pierre's general view of the world was moulded by a conception of civilisation progressing towards a goal of human happiness. In 1737 he published a special work to explain this conception: the *Observations on the Continuous Progress of Universal Reason.*

He recurs to the comparison of the life of collective humanity to that of an individual, and, like Fontenelle and Terrasson, accentuates the point where the analogy fails. We may regard our race as composed of all the nations that have been and will be—and assign to it different ages. For instance, when the race is ten thousand years old a century will be what a single year is in the life of a centenarian. But there is this prodigious difference. The mortal man grows old and loses his reason and happiness through the enfeeblement of his bodily machine; whereas the human race, by the perpetual and infinite succession of generations, will find itself at the end of ten thousand years more capable of growing in wisdom and happiness than it was at the end of four thousand.

At present the race is apparently not more than seven or eight thousand years old, and is only "in the infancy of human reason," compared with what it will be five or six thousand years hence. And when that stage is reached, it will only have entered on what we may call its first youth, when we consider what it will be when it is a hundred thousand years older still, continually growing in reason and wisdom.

Here we have for the first time, expressed in definite terms, the vista of an immensely long pro-

gressive life in front of humanity. Civilisation is only in its infancy. Bacon, like Pascal, had conceived it to be in its old age. Fontenelle and Perrault seem to have regarded it as in its virility; they set no term to its duration, but they did not dwell on future prospects. The Abbé was the first to fix his eye on the remote destinies of the race and name immense periods of time. It did not occur to him to consider that our destinies are bound up with those of the solar system, and that it is useless to operate with millennial periods of progress unless you are assured of a corresponding stability in the cosmic environment.

As a test of the progress which reason has already made, Saint-Pierre asserts that a comparison of the best English and French works on morals and politics with the best works of Plato and Aristotle proves that the human race has made a sensible advance. But that advance would have been infinitely greater were it not that three general obstacles retarded it and even, at some times and in some countries, caused a retrogression. These obstacles were wars, superstition, and the jealousy of rulers who feared that progress in the science of politics would be dangerous to themselves. In consequence of these impediments it was only in the time of Bodin and Bacon that the human race began to start anew from the point which it had reached in the days of Plato and Aristotle.

Since then the rate of progress has been accelerated, and this has been due to several causes. The expansion of sea commerce has produced more wealth, and wealth means greater leisure, and more writers and readers. In the second place, mathe-

matics and physics are more studied in colleges, and their tendency is to liberate us from subjection to the authority of the ancients. Again, the foundation of scientific Academies has given facilities both for communicating and for correcting new discoveries; the art of printing provides a means for diffusing them; and, finally, the habit of writing in the vulgar tongue makes them accessible. The author might also have referred to the modern efforts to popularise science, in which his friend Fontenelle had been one of the leaders.

He proceeds, in this connection, to lay down a rather doubtful principle, that in any two countries the difference in enlightenment between the lowest classes will correspond to the difference between the most highly educated classes. At present, he says, Paris and London are the places where human wisdom has reached the most advanced stage. It is certain that the ten best men of the highest class at Ispahan or Constantinople will be inferior in their knowledge of politics and ethics to the ten most distinguished sages of Paris or London. And this will be true in all classes. The thirty most intelligent children of the age of fourteen at Paris will be more enlightened than the thirty most intelligent children of the same age at Constantinople, and the same proportional difference will be true of the lowest classes of the two cities.

But while the progress of speculative reason has been rapid, practical reason—the distinction is the Abbé's—has made little advance. In point of morals and general happiness the world is apparently much the same as ever. Our mediocre savants know twenty times as much as Socrates and Confucius,

but our most virtuous men are not more virtuous than they. The growth of science has added much to the arts and conveniences of life, and to the sum of pleasures, and will add more. The progress in physical science is part of the progress of the "universal human reason," whose aim is the augmentation of our happiness. But there are two other sciences which are much more important for the promotion of happiness—Ethics and Politics—and these, neglected by men of genius, have made little way in the course of two thousand years. It is a grave misfortune that Descartes and Newton did not devote themselves to perfecting these sciences, so incomparably more useful for mankind than those in which they made their great discoveries. They fell into a prevailing error as to the comparative values of the various domains of knowledge, an error to which we must also ascribe the fact that while Academies of Sciences and Belles-Lettres exist there are no such institutions for Politics or Ethics.

By these arguments he establishes to his own satisfaction that there are no irremovable obstacles to the Progress of the human race towards happiness, no hindrances that could not be overcome if governments only saw eye to eye with the Abbé de Saint-Pierre. Superstition is already on the decline; there would be no more wars if his simple scheme for permanent peace were adopted. Let the State immediately found Political and Ethical Academies; let the ablest men consecrate their talents to the science of government; and in a hundred years we shall make more progress than we should make in two thousand at the rate we are moving. If these things are done, human

reason will have advanced so far in two or three millenniums that the wisest men of that age will be as far superior to the wisest of to-day as these are to the wisest African savages. This "perpetual and unlimited augmentation of reason" will one day produce an increase in human happiness which would astonish us more than our own civilisation would astonish the Kaffirs.

4

The Abbé de Saint-Pierre was indeed terribly at ease in confronting the deepest and most complex problems which challenge the intellect of man. He had no notion of their depth and complexity, and he lightly essayed them, treating human nature, as if it were an abstraction, by a method which he would doubtless have described as Cartesian. He was simply operating with the ideas which were all round him in a society saturated with Cartesianism, —supremacy of human reason, progressive enlightenment, the value of this life for its own sake, and the standard of utility. Given these ideas and the particular bias of his own mind, it required no great ingenuity to advance from the thought of the progress of science to the thought of progress in man's moral nature and his social conditions. The omnipotence of governments to mould the destinies of peoples, the possibility of the creation of enlightened governments, and the indefinite progress of enlightenment—all articles of his belief—were the terms of an argument of the sorites form, which it was a simple matter to develop in his brief treatise.

But we must not do him injustice. He was a much more considerable thinker than posterity for a

long time was willing to believe. It is easy to ridicule some of his *projets*, and dismiss him as a crank who was also somewhat of a bore. The truth, however, is that many of his schemes were sound and valuable. His economic ideas, which he thought out for himself, were in advance of his time, and he has even been described by a recent writer as "un contemporain égaré au xviii[e] siècle." Some of his financial proposals were put into practice by Turgot. But his significance in the development of the revolutionary ideas which were to gain control in the second half of the eighteenth century has hardly been appreciated yet, and it was imperfectly appreciated by his contemporaries.

It is easy to see why. His theories are buried in his multitudinous *projets*. If, instead of working out the details of endless particular reforms, he had built up general theories of government and society, economics and education, they might have had no more intrinsic value, but he would have been recognised as the precursor of the Encyclopaedists.

For his principles are theirs. The omnipotence of government and laws to mould the morals of peoples; the subordination of all knowledge to the goddess of utility; the deification of human reason; and the doctrine of Progress. His crude utilitarianism led him to depreciate the study of mathematical and physical sciences—notwithstanding his veneration for Descartes—as comparatively useless, and he despised the fine arts as waste of time and toil which might be better spent. He had no knowledge of natural science and he had no artistic susceptibility. The philosophers of the Encyclopaedia did not go so far, but they tended in this

direction. They were cold and indifferent towards speculative science, and they were inclined to set higher value on artisans than on artists.

In his religious ideas the Abbé differed from Voltaire and the later social philosophers in one important respect, but this very difference was a consequence of his utilitarianism. Like them he was a Deist, as we saw; he had imbibed the spirit of Bayle and the doctrine of the English rationalists, which were penetrating French society during the later part of his life. His God, however, was more than the creator and organiser of the Encyclopaedists, he was also the "Dieu vengeur et rémunérateur" in whom Voltaire believed. But here his faith was larger than Voltaire's. For while Voltaire referred the punishments and rewards to this life, the Abbé believed in the immortality of the soul, in heaven and hell. He acknowledged that immortality could not be demonstrated, that it was only probable, but he clung to it firmly and even intolerantly. It is clear from his writings that his affection for this doctrine was due to its utility, as an auxiliary to the magistrate and the tutor, and also to the consideration that Paradise would add to the total of human happiness.

But though his religion had more articles, he was as determined a foe of "superstition" as Voltaire, Diderot, and the rest. He did not go so far as they in aggressive rationalism—he belonged to an older generation—but his principles were the same.

The Abbé de Saint-Pierre thus represents the transition from the earlier Cartesianism, which was occupied with purely intellectual problems, to the

later thought of the eighteenth century, which concentrated itself on social problems. He anticipated the "humanistic" spirit of the Encyclopaedists, who were to make man, in a new sense, the centre of the world. He originated, or at least was the first to proclaim, the new creed of man's destinies, indefinite social progress.

CHAPTER VII

NEW CONCEPTIONS OF HISTORY: MONTESQUIEU, VOLTAIRE, TURGOT

THE theory of human Progress could not be durably established by abstract arguments, or on the slender foundations laid by the Abbé de Saint-Pierre. It must ultimately be judged by the evidence afforded by history, and it is not accidental that, contemporaneously with the advent of this idea, the study of history underwent a revolution. If Progress was to be more than the sanguine dream of an optimist it must be shown that man's career on earth had not been a chapter of accidents which might lead anywhere or nowhere, but is subject to discoverable laws which have determined its general route, and will secure his arrival at the desirable place. Hitherto a certain order and unity had been found in history by the Christian theory of providential design and final causes. New principles of order and unity were needed to replace the principles which rationalism had discredited. Just as the advance of science depended on the postulate that physical phenomena are subject to invariable laws, so if any conclusions were to be drawn from history some similar postulate as to social phenomena was required.

It was thus in harmony with the general movement of thought that about the middle of the eighteenth century new lines of investigation were opened leading to sociology, the history of civilisation, and the philosophy of history. Montesquieu's *De l'esprit des lois*, which may claim to be the parent work of modern social science, Voltaire's *Essai sur les mœurs*, and Turgot's plan of a *Histoire universelle* begin a new era in man's vision of the past.

I

Montesquieu was not among the apostles of the idea of Progress. It never secured any hold upon his mind. But he had grown up in the same intellectual climate in which that idea was produced; he had been nurtured both on the dissolving dialectic of Bayle, and on the Cartesian enunciation of natural law. And his work contributed to the service, not of the doctrine of the past, but of the doctrine of the future.

For he attempted to extend the Cartesian theory to social facts. He laid down that political, like physical, phenomena are subject to general laws. He had already conceived this, his most striking and important idea, when he wrote the *Considerations on the Greatness and Decadence of the Romans* (1734), in which he attempted to apply it:

> It is not Fortune who governs the world, as we see from the history of the Romans. There are general causes, moral or physical, which operate in every monarchy, raise it, maintain it, or overthrow it; all that occurs is subject to these causes; and if a particular

cause, like the accidental result of a battle, has ruined a state, there was a general cause which made the downfall of this state ensue from a single battle. In a word, the principal movement (*l'allure principale*) draws with it all the particular occurrences.

But if this excludes Fortune it also dispenses with Providence, design, and final causes; and one of the effects of the *Considerations* which Montesquieu cannot have overlooked was to discredit Bossuet's treatment of history.

The *Esprit des lois* appeared fourteen years later. Among books which have exercised a considerable influence on thought few are more disappointing to a modern reader. The author had not the gift of what might be called logical architecture, and his work produces the effect of a collection of ideas which he was unable to co-ordinate in the clarity of a system. A new principle, the operation of general causes, is enthroned; but, beyond the obvious distinction of physical and moral, they are not classified. We have no guarantee that the moral causes are fully enumerated, and those which are original are not distinguished from those which are derived. The general cause which Montesquieu impresses most clearly on the reader's mind is that of physical environment—geography and climate.

The influence of climate on civilisation was not a new idea. In modern times, as we have seen, it was noticed by Bodin and recognised by Fontenelle. The Abbé de Saint-Pierre applied it to explain the origin of the Mohammedan religion, and the Abbé Du Bos in his *Reflexions on Poetry and Painting* maintained that climate helps to determine the

epochs of art and science. Chardin in his *Travels*, a book which Montesquieu studied, had also appreciated its importance. But Montesquieu drew general attention to it, and since he wrote, geographical conditions have been recognised by all inquirers as an influential factor in the development of human societies. His own discussion of the question did not result in any useful conclusions. He did not determine the limits of the action of physical conditions, and a reader hardly knows whether to regard them as fundamental or accessory, as determining the course of civilisation or only perturbing it. "Several things govern men," he says, "climate, religion, laws, precepts of government, historical examples, morals, and manners, whence is formed as their result a general mind (*esprit général*)." This co-ordination of climate with products of social life is characteristic of his unsystematic thought. But the remark which the author went on to make, that there is always a correlation between the laws of a people and its *esprit général*, was important. It pointed to the theory that all the products of social life are closely interrelated.

In Montesquieu's time people were under the illusion that legislation has an almost unlimited power to modify social conditions. We have seen this in the case of Saint-Pierre. Montesquieu's conception of general laws should have been an antidote to this belief. It had however less effect on his contemporaries than we might have expected, and they found more to their purpose in what he said of the influence of laws on manners. There may be something in Comte's suggestion

that he could not give his conception any real consistency or vigour, just because he was himself unconsciously under the influence of excessive faith in the effects of legislative action.

A fundamental defect in Montesquieu's treatment of social phenomena is that he abstracted them from their relations in time. It was his merit to attempt to explain the correlation of laws and institutions with historical circumstances, but he did not distinguish or connect stages of civilisation. He was inclined to confound, as Sorel has observed, all periods and constitutions. Whatever be the value of the idea of Progress, we may agree with Comte that, if Montesquieu had grasped it, he would have produced a more striking work. His book announces a revolution in the study of political science, but in many ways belongs itself to the pre-Montesquieu era.

2

In the same years in which Montesquieu was busy on the composition of the *Esprit des lois*, Voltaire was writing his *Age of Louis XIV.* and his *Essay on the Manners and Mind of Nations, and on the Principal Facts of History from Charlemagne to the Death of Louis XIII.* The former work, which everybody reads still, appeared in 1751. Parts of the *Essay*, which has long since fallen into neglect, were published in the *Mercure de France* between 1745 and 1751; it was issued complete in 1756, along with the *Age of Louis XIV.*, which was its continuation. If we add the *Précis of the Reign of Louis XV.* (1769), and observe that the

Introduction and first fourteen chapters of the *Essay* sketch the history of the world before Charlemagne, and that China, India, and America are included in the survey, Voltaire's work amounts to a complete survey of the civilisation of the world from the earliest times to his own. If Montesquieu founded social science, Voltaire created the history of civilisation, and the *Essay*, for all its limitations, stands out as one of the considerable books of the century.

In his *Age of Louis XIV.* he announced that his object was "to paint not the actions of a single man, but the mind of men (*l'esprit des hommes*) in the most enlightened age that had ever been," and that "the progress of the arts and sciences" was an essential part of his subject. In the same way he proposed in the *Essay* to trace "l'histoire de l'esprit humain," not the details of facts, and to show by what steps man advanced "from the barbarous rusticity" of the times of Charlemagne and his successors "to the politeness of our own." To do this, he said, was really to write the history of opinion, for all the great successive social and political changes which have transformed the world were due to changes of opinion. Prejudice succeeded prejudice, error followed error; "at last, with time men came to correct their ideas and learn to think."

The *motif* of the book is, briefly, that wars and religions have been the great obstacles to the progress of humanity, and that if they were abolished, with the prejudices which engender them, the world would rapidly improve.

"We may believe," he says, "that reason and

industry will always progress more and more; that the useful arts will be improved; that of the evils which have afflicted men, prejudices, which are not their least scourge, will gradually disappear among all those who govern nations, and that philosophy, universally diffused, will give some consolation to human nature for the calamities which it will experience in all ages."

This indeed is not the tone of the Abbé de Saint-Pierre. Voltaire's optimism was always tempered with cynicism. But the idea of Progress is there, though moderately conceived. And it is based on the same principle—universal reason implanted in man, which "subsists in spite of all the passions which make war on it, in spite of all the tyrants who would drown it in blood, in spite of the imposters who would annihilate it by superstition." And this was certainly his considered view. His common sense prevented him from indulging in Utopian speculations about the future; and his cynicism constantly led him to use the language of a pessimist. But at an early stage of his career he had taken up arms for human nature against that "sublime misanthrope" Pascal, who "writes against human nature almost as he wrote against the Jesuits"; and he returned to the attack at the end of his life. Now Pascal's *Pensées* enshrined a theory of life—the doctrine of original sin, the idea that the object of life is to prepare for death—which was sternly opposed to the spirit of Progress. Voltaire instinctively felt that this was an enemy that had to be dealt with. In a lighter vein he had maintained in a well-known poem, *Le Mondain*,[1]

[1] 1756.

the value of civilisation and all its effects, including luxury, against those who regretted the simplicity of ancient times, the golden age of Saturn.

O le bon temps que ce siècle de fer!

Life in Paris, London, or Rome to-day is infinitely preferable to life in the garden of Eden.

D'un bon vin frais ou la mousse ou la sève
Ne gratta point le triste gosier d'Ève.
La soie et l'or ne brillaient point chez eux.
Admirez-vous pour cela nos aïeux?
Il leur manquait l'industrie et l'aisance:
Est-ce vertu? c'était pure ignorance.

To return to the *Essay*, it flung down the gage of battle to that conception of the history of the world which had been brilliantly represented by Bossuet's *Discours sur l'histoire universelle*. This work was constantly in Voltaire's mind. He pointed out that it had no claim to be universal; it related only to four or five peoples, and especially the little Jewish nation which "was unknown to the rest of the world or justly despised," but which Bossuet made the centre of interest, as if the final cause of all the great empires of antiquity lay in their relations to the Jews. He had Bossuet in mind when he said "we will speak of the Jews as we would speak of Scythians or Greeks, weighing probabilities and discussing facts." In his new perspective the significance of Hebrew history is for the first time reduced to moderate limits.

But it was not only in this particular, though central, point that Voltaire challenged Bossuet's view. He eliminated final causes altogether, and Providence plays no part on his historical

stage. Here his work reinforced the teaching of Montesquieu. Otherwise Montesquieu and Voltaire entirely differed in their methods. Voltaire concerned himself only with the causal enchainment of events and the immediate motives of men. His interpretation of history was confined to the discovery of particular causes; he did not consider the operation of those larger general causes which Montesquieu investigated. Montesquieu sought to show that the vicissitudes of societies were subject to law; Voltaire believed that events were determined by chance where they were not consciously guided by human reason. The element of chance is conspicuous even in legislation: "almost all laws have been instituted to meet passing needs, like remedies applied fortuitously, which have cured one patient and kill others."

On Voltaire's theory, the development of humanity might at any moment have been diverted into a different course; but whatever course it took the nature of human reason would have ensured a progress in civilisation. Yet the reader of the *Essay* and *Louis XIV.* might well have come away with a feeling that the security of Progress is frail and precarious. If fortune has governed events, if the rise and fall of empires, the succession of religions, the revolutions of states, and most of the great crises of history were decided by accidents, is there any cogent ground for believing that human reason, the principle to which Voltaire attributes the advance of civilisation, will prevail in the long run? Civilisation has been organised here and there, now and then, up to a certain point; there have been eras of rapid progress, but how can we be sure that these

are not episodes, themselves also fortuitous? For growth has been followed by decay, progress by regress; can it be said that history authorises the conclusion that reason will ever gain such an ascendancy that the play of chance will no longer be able to thwart her will? Is such a conclusion more than a hope, unsanctioned by the data of past experience, merely one of the characteristics of the age of illumination?

Voltaire and Montesquieu thus raised fundamental questions of great moment for the doctrine of Progress, questions which belong to what was soon to be known as the Philosophy of History, a name invented by Voltaire, though hardly meant by him in the sense which it afterwards assumed.

3

Six years before Voltaire's *Essay* was published in its complete form a young man was planning a work on the same subject. Turgot is honourably remembered as an economist and administrator, but if he had ever written the *Discourses on Universal History* which he designed at the age of twenty-three his position in historical literature might have overshadowed his other claims to be remembered. We possess a partial sketch of its plan, which is supplemented by two lectures he delivered at the Sorbonne in 1750; so that we know his general conceptions.

He had assimilated the ideas of the *Esprit des lois*, and it is probable that he had read the parts of Voltaire's work which had appeared in a periodical. His work, like Voltaire's, was to be a challenge to Bossuet's view of history; his purpose was to trace

the fortunes of the race in the light of the idea of Progress. He occasionally refers to Providence, but this is no more than a prudent lip-service. Providence has no functions in his scheme. The part which it played in Bossuet is usurped by those general causes which he had learned from Montesquieu. But his systematic mind would have organised and classified the ideas which Montesquieu left somewhat confused. He criticised the inductions drawn in the *Esprit des lois* concerning the influence of climate as hasty and exaggerated; and he pointed out that the physical causes can only produce their effects by acting on "the hidden principles which contribute to form our mind and character." It follows that the psychical or moral causes are the first element to consider, and it is a fault of method to try to evaluate physical causes till we have exhausted the moral, and are certain that the phenomena cannot be explained by these alone. In other words, the study of the development of societies must be based on psychology; and for Turgot, as for all his progressive contemporaries, psychology meant the philosophy of Locke.

General necessary causes, therefore, which we should rather call conditions, have determined the course of history—the nature of man, his passions, and his reason, in the first place; and in the second, his environment,—geography and climate. But its course is a strict sequence of particular causes and effects, "which bind the state of the world (at a given moment) to all those which have preceded it." Turgot does not discuss the question of free-will, but his causal continuity does not exclude "the free action of great men."

He conceives universal history as the progress of the human race advancing as an immense whole steadily, though slowly, through alternating periods of calm and disturbance towards greater perfection. The various units of the entire mass do not move with equal steps, because nature is not impartial with her gifts. Some men have talents denied to others, and the gifts of nature are sometimes developed by circumstances, sometimes left buried in obscurity. The inequalities in the march of nations are due to the infinite variety of circumstances; and these inequalities may be taken to prove that the world had a beginning, for in an eternal duration they would have disappeared.

But the development of human societies has not been guided by human reason. Men have not consciously made general happiness the end of their actions. They have been conducted by passion and ambition and have never known to what goal they were moving. For if reason had presided, progress would soon have been arrested. To avoid war peoples would have remained in isolation, and the race would have lived divided for ever into a multitude of isolated groups, speaking different tongues. All these groups would have been limited in the range of their ideas, stationary in science, art, and government, and would never have risen above mediocrity. The history of China is an example of the results of restricted intercourse among peoples. Thus the unexpected conclusion emerges, that without unreason and injustice there would have been no progress.

It is hardly necessary to observe that this argument is untenable. The hypothesis assumes that reason is in control among the primitive peoples, and at the

same time supposes that its power would completely disappear if they attempted to engage in peaceful intercourse. But though Turgot has put his point in an unconvincing form, his purpose was to show that as a matter of fact "the tumultuous and dangerous passions" have been driving-forces which have moved the world in a desirable direction till the time should come for reason to take the helm.

Thus, while Turgot might have subscribed to Voltaire's assertion that history is largely "un ramas de crimes, de folies, et de malheurs," his view of the significance of man's sufferings is different and almost approaches the facile optimism of Pope—"whatever is, is right." He regards all the race's actual experiences as the indispensable mechanism of Progress, and does not regret its mistakes and calamities. Many changes and revolutions, he observes, may seem to have had most mischievous effects; yet every change has brought some advantage, for it has been a new experience and therefore has been instructive. Man advances by committing errors. The history of science shows (as Fontenelle had pointed out) that truth is reached over the ruins of false hypotheses.

The difficulty presented by periods of decadence and barbarism succeeding epochs of enlightenment is met by the assertion that in such dark times the world has not stood still; there has really been a progression which, though relatively inconspicuous, is not unimportant. In the Middle Ages, which are the prominent case, there were improvements in mechanical arts, in commerce, in some of the habits of civil life, all of which helped to prepare the way for happier times. Here Turgot's view of history

is sharply opposed to Voltaire's. He considers Christianity to have been a powerful agent of civilisation, not a hinderer or an enemy. Had he executed his design, his work might well have furnished a notable makeweight to the view held by Voltaire, and afterwards more judicially developed by Gibbon, that "the triumph of barbarism and religion" was a calamity for the world.

Turgot also propounded two laws of development. He observed that when a people is progressing, every step it takes causes an acceleration in the rate of progress. And he anticipated Comte's famous "law" of the three stages of intellectual evolution, though without giving it the extensive and fundamental significance which Comte claimed for it. "Before man understood the causal connection of physical phenomena, nothing was so natural as to suppose they were produced by intelligent beings, invisible and resembling ourselves; for what else would they have resembled?" That is Comte's theological stage. "When philosophers recognised the absurdity of the fables about the gods, but had not yet gained an insight into natural history, they thought to explain the causes of phenomena by abstract expressions such as essences and faculties." That is the metaphysical stage. "It was only at a later period, that by observing the reciprocal mechanical action of bodies hypotheses were formed which could be developed by mathematics and verified by experience." There is the positive stage. The observation assuredly does not possess the far-reaching importance which Comte attached to it; but whatever value it has, Turgot deserves the credit of having been the first to state it.

The notes which Turgot made for his plan permit us to conjecture that his *Universal History* would have been a greater and more profound work than the *Essay* of Voltaire. It would have embodied in a digested form the ideas of Montesquieu to which Voltaire paid little attention, and the author would have elaborated the intimate connection and mutual interaction among all social phenomena—government and morals, religion, science, and arts. While his general thesis coincided with that of Voltaire—the gradual advance of humanity towards a state of enlightenment and reasonableness,—he made the idea of Progress more vital; for him it was an organising conception, just as the idea of Providence was for St. Augustine and Bossuet an organising conception, which gave history its unity and meaning. The view that man has throughout been blindly moving in the right direction is the counterpart of what Bossuet represented as a divine plan wrought out by the actions of men who are ignorant of it, and is sharply opposed to the views of Voltaire and the other philosophers of the day who ascribed Progress exclusively to human reason consciously striving against ignorance and passion.

CHAPTER VIII

THE ENCYCLOPAEDISTS AND ECONOMISTS

I

THE intellectual movement which prepared French opinion for the Revolution and supplied the principles for reconstituting society may be described as humanistic in the sense that man was the centre of speculative interest.

"One consideration especially that we ought never to lose from sight," says Diderot, "is that, if we ever banish a man, or the thinking and contemplative being, from above the surface of the earth, this pathetic and sublime spectacle of nature becomes no more than a scene of melancholy and silence . . . It is the presence of man that gives its interest to the existence of other beings. . . . Why should we not make him a common centre? . . . Man is the single term from which we ought to set out." Hence psychology, morals, the structure of society, were the subjects which riveted attention instead of the larger supra-human problems which had occupied Descartes, Malebranche, and Leibnitz. It mattered little whether the universe was the best that could be constructed; what mattered was the relation of man's own little world to his will and capacities.

Physical science was important only in so far as it could help social science and minister to the needs of man. The closest analogy to this development of thought is not offered by the Renaissance, to which the description *humanistic* has been conventionally appropriated, but rather by the age of illumination in Greece in the latter half of the fifth century B.C., represented by Protagoras, Socrates, and others who turned from the ultimate problems of the cosmos, hitherto the main study of philosophers, to man, his nature and his works.

In this revised form of "anthropo-centrism" we see how the general movement of thought has instinctively adapted itself to the astronomical revolution. On the Ptolemaic system it was not incongruous or absurd that man, lord of the central domain in the universe, should regard himself as the most important cosmic creature. This is the view, implicit in the Christian scheme, which had been constructed on the old erroneous cosmology. When the true place of the earth was shown and man found himself in a tiny planet attached to one of innumerable solar worlds, his cosmic importance could no longer be maintained. He was reduced to the condition of an insect creeping on a " tas de boue," which Voltaire so vividly illustrated in *Micromégas*. But man is resourceful; ἄπορος ἐπ' οὐδὲν ἔρχεται. Displaced, along with his home, from the centre of things, he discovers a new means of restoring his self-importance; he interprets his humiliation as a deliverance. Finding himself in an insignificant island floating in the immensity of space, he decides that he is at last master of his own destinies; he can fling away the old equipment of final causes, original sin, and the

rest; he can construct his own chart and, bound by no cosmic scheme, he need take the universe into account only in so far as he judges it to be to his own profit. Or, if he is a philosopher, he may say that, after all, the universe for him is built out of his own sensations, and that by virtue of this relativity "anthropo-centrism" is restored in a new and more effective form.

Built out of his own sensations: for the philosophy of Locke was now triumphant in France. I have used the term Cartesianism to designate, not the metaphysical doctrines of Descartes (innate ideas, two substances, and the rest), but the great principles which survived the passing of his metaphysical system — the supremacy of reason, and the immutability of natural laws, not subject to providential interventions. These principles still controlled thought, but the particular views of Descartes on mental phenomena were superseded in France by the psychology of Locke, whose influence was established by Voltaire and Condillac. The doctrine that all our ideas are derived from the senses lay at the root of the whole theory of man and society, in the light of which the revolutionary thinkers, Diderot, Helvétius, and their fellows, criticised the existing order and exposed the reigning prejudices. This sensationalism (which went beyond what Locke himself had really meant) involved the strict relativity of knowledge and led at once to the old pragmatic doctrine of Protagoras, that man is the measure of all things. And the spirit of the French philosophers of the eighteenth century was distinctly pragmatic. The advantage of man was their principle, and the value of speculation was

judged by its definite service to humanity. "The value and rights of truth are founded on its utility," which is "the unique measure of man's judgements," one thinker asserts; another declares that "the useful circumscribes everything," *l'utile circonscrit tout*; another lays down that "to be virtuous is to be useful; to be vicious is to be useless or harmful; that is the sum of morality." Helvétius, anticipating Bentham, works out the theory that utility is the only possible basis of ethics. Bacon, the utilitarian, was extolled like Locke. As, a hundred years before, his influence had inspired the foundation of the Royal Society, so now his name was invoked by the founders of the Encyclopaedia.

Beneath all philosophical speculation there is an undercurrent of emotion, and in the French philosophers of the eighteenth century this emotional force was strong and even violent. They aimed at practical results. Their work was a calculated campaign to transform the principles and the spirit of governments and to destroy sacerdotalism. The problem for the human race being to reach a state of felicity by its own powers, these thinkers believed that it was soluble by the gradual triumph of reason over prejudice and knowledge over ignorance. Violent revolution was far from their thoughts; by the diffusion of knowledge they hoped to create a public opinion which would compel governments to change the tenor of their laws and administration and make the happiness of the people their guiding principle. The optimistic confidence that man is *perfectible*, which means capable of indefinite improvement, inspired the movement as a whole, however greatly particular thinkers might differ in their views.

Belief in Progress was their sustaining faith, although, occupied by the immediate problems of amelioration, they left it rather vague and ill-defined. The word itself is seldom pronounced in their writings. The idea is treated as subordinate to the other ideas in the midst of which it had grown up: Reason, Nature, Humanity, Illumination (*lumières*). It has not yet entered upon an independent life of its own and received a distinct label, though it is already a vital force.

In reviewing the influences which were forming a new public opinion during the forty years before the Revolution, it is convenient for the present purpose to group together the thinkers (including Voltaire) associated with the Encyclopaedia, who represented a critical and consciously aggressive force against traditional theories and existing institutions. The constructive thinker Rousseau was not less aggressive, but he stands apart and opposed, by his hostility to modern civilisation. Thirdly, we must distinguish the school of Economists, also reformers and optimists, but of more conservative temper than the typical Encyclopaedists.

2

The *Encyclopaedia* (1751–1765) has rightly been pronounced the central work of the rationalistic movement which made the France of 1789 so different from the France of 1715. It was the organised section of a vast propaganda, speculative and practical, carried on by men of the most various views, most of whom were associated directly with it. As has well been observed, it did for the rationalism of the eighteenth century in

France much what the *Fortnightly Review*, under the editorship of Mr. Morley (from 1868 to 1882) did for that of the nineteenth in England, as an organ for the penetrating criticism of traditional beliefs. If Diderot, who directed the Encyclopaedia with the assistance of d'Alembert the mathematician, had lived a hundred years later he would probably have edited a journal.

We saw that the "solidarity" of the sciences was one of the conceptions associated with the theory of intellectual progress, and that the popularisation of knowledge was another. Both these conceptions inspired the Encyclopaedia, which was to gather up and concentrate the illumination of the modern age. It was to establish the lines of communication among all departments, "to enclose in the unity of a system the infinitely various branches of knowledge." And it was to be a library of popular instruction. But it was also intended to be an organ of propaganda. In the history of the intellectual revolution it is in some ways the successor of the Dictionary of Bayle, which, two generations before, collected the material of war to demolish traditional doctrines. The Encyclopaedia carried on the campaign against authority and superstition by indirect methods, but it was the work of men who were not sceptics like Bayle, but had ideals, positive purposes, and social hopes. They were not only confident in reason and in science, but most of them had also a more or less definite belief in the possibility of an advance of humanity towards perfection.

As one of their own band afterwards remarked, they were less occupied in enlarging the bounds of knowledge than in spreading the light and making

war on prejudice.[1] The views of the individual contributors differed greatly, and they cannot be called a school, but they agreed so far in common tendencies that they were able to form a co-operative alliance.

The propaganda of which the Encyclopaedia was the centre was reinforced by the independent publications of some of the leading men who collaborated or were closely connected with their circle, notably those of Diderot himself, Baron d'Holbach, and Helvétius.

3

The optimism of the Encyclopaedists was really based on an intense consciousness of the enlightenment of their own age. The progressiveness of knowledge was taken as axiomatic, but was there any guarantee that the light, now confined to small circles, could ever enlighten the world and regenerate mankind? They found the guarantee they required, not in an induction from the past experience of the race, but in an *a priori* theory: the indefinite malleability of human nature by education and institutions. This had been, as we saw, assumed by the Abbé de Saint-Pierre. It pervaded the speculation of the age, and was formally deduced from the sensational psychology of Locke and Condillac. It was developed, in an extreme form, in the work of Helvétius, *De l'esprit* (1758).

In this book, which was to exert a large influence in England, Helvétius sought, among other things, to show that the science of morals is equivalent to

[1] Condorcet, *Esquisse*, p. 206 (ed. 1822).

the science of legislation, and that in a well-organised society all men are capable of rising to the highest point of mental development. Intellectual and moral inequalities between man and man arise entirely from differences in education and social circumstances. Genius itself is not a gift of nature; the man of genius is a product of circumstances—social, not physical, for Helvétius rejects the influence of climate. It follows that if you change education and social institutions you can change the character of men.

The error of Helvétius in ignoring the irremovable physical differences between individuals, the varieties of cerebral organisation, was at once pointed out by Diderot. This error, however, was not essential to the general theory of the immeasurable power of social institutions over human character, and other thinkers did not fall into it. All alike, indeed, were blind to the factor of heredity. But the theory in its collective application contains a truth which nineteenth century critics, biassed by their studies in heredity, have been prone to overlook. The social inheritance of ideas and emotions to which the individual is submitted from infancy is more important than the tendencies physically transmitted from parent to child. The power of education and government in moulding the members of a society has recently been illustrated on a large scale in the psychological transformation of the German people in the life of a generation.

It followed from the theory expounded by Helvétius that there is no impassable barrier between the advanced and the stationary or retrograde races of the earth. "True morality," Baron

d'Holbach wrote, "should be the same for all the inhabitants of the globe. The savage man and the civilised; the white man, the red man, the black man; Indian and European, Chinaman and Frenchman, Negro and Lapp have the same nature. The differences between them are only modifications of the common nature produced by climate, government, education, opinions, and the various causes which operate on them. Men differ only in the ideas they form of happiness and the means which they have imagined to obtain it." Here again the eighteenth century theorists held a view which can no longer be dismissed as absurd. Some are coming round to the opinion that enormous differences in capacity which seem fundamental are a result of the differences in social inheritance, and that these again are due to a long sequence of historical circumstances; and consequently that there is no people in the world doomed by nature to perpetual inferiority or irrevocably disqualified by race from playing a useful part in the future of civilisation.

4

This doctrine of the possibility of indefinitely moulding the characters of men by laws and institutions—whether combined or not with a belief in the natural equality of men's faculties—laid a foundation on which the theory of the perfectibility of humanity could be raised. It marked, therefore, an important stage in the development of the doctrine of Progress.

It gave, moreover, a new and larger content to that doctrine by its applicability, not only to the

peoples which are at present in the van of civilisation, but also to those which have lagged far behind and may appear irreclaimably barbarous — thus potentially including all humanity in the prospect of the future. Turgot had already conceived "the total mass of the human race moving always slowly forward"; he had declared that the human mind everywhere contains the germs of progress and that the inequality of peoples is due to the infinite variety of their circumstances. This enlarging conception was calculated to add strength to the idea of Progress, by raising it to a synthesis comprehending not merely the western civilised nations but the whole human world.

Interest in the remote peoples of the earth, in the unfamiliar civilisations of the East, in the untutored races of America and Africa, was vivid in France in the eighteenth century. Everyone knows how Voltaire and Montesquieu used Hurons or Persians to hold up the glass to Western manners and morals, as Tacitus used the Germans to criticise the society of Rome. But very few ever look into the seven volumes of the Abbé Raynal's *History of the Two Indies* which appeared in 1772. It is, however, one of the remarkable books of the century. Its immediate practical importance lay in the array of facts which it furnished to the friends of humanity in the movement against negro slavery. But it was also an effective attack on the Church and the sacerdotal system. The author's method was the same which his greater contemporary Gibbon employed on a larger scale. A history of facts was a more formidable indictment than any declamatory attack.

Raynal brought home to the conscience of Europeans the miseries which had befallen the natives of the New World through the Christian conquerors and their priests. He was not indeed an enthusiastic preacher of Progress. He is unable to decide between the comparative advantages of the savage state of nature and the most highly cultivated society. But he observes that "the human race is what we wish to make it," that the felicity of man depends entirely on the improvement of legislation; and in the survey of the history of Europe to which the last Book of his work is devoted, his view is generally optimistic.

5

Baron d'Holbach had a more powerful brain than Helvétius, but his writings had probably less influence, though he was the spiritual father of two prominent Revolutionaries, Hébert and Chaumette. His *System of Nature* (1770) develops a purely naturalistic theory of the universe, in which the prevalent Deism is rejected: there is no God; material Nature stands out alone, self-sufficing, *dominis privata superbis*. The book suggests how the Lucretian theory of development might have led to the idea of Progress. But it sent a chilly shock to the hearts of many and probably convinced few. The effective part was the outspoken and passionate indictment of governments and religions as causes of most of the miseries of mankind.

It is in other works, especially in his *Social System*, that his views of Progress are to be sought. Man is simply a part of nature; he has no privileged position, and he is born neither good nor bad.

Erras, as Seneca said, *si existumas vitia nobiscum esse: supervenerunt, ingesta sunt.*[1] We are made good or bad by education, public opinion, laws, government; and here the author points to the significance of the instinct of imitation as a social force, which a modern writer, M. Tarde, has worked into a system.

The evils, which are due to the errors of tyranny and superstition, the force of truth will gradually diminish if it cannot completely banish them; for our governments and laws may be perfected by the progress of useful knowledge. But the process will be a long one: centuries of continuous mental effort in unravelling the causes of social ill-being and repeated experiments to determine the remedies (*des expériences réitérées de la société*). In any case we cannot look forward to the attainment of an unchangeable or unqualified felicity. That is a mere chimera "incompatible with the nature of a being whose feeble machine is subject to derangement and whose ardent imagination will not always submit to the guidance of reason. Sometimes to enjoy, sometimes to suffer, is the lot of man; to enjoy more often than to suffer is what constitutes well-being."

D'Holbach was a strict determinist; he left no room for freewill in the rigorous succession of cause and effect, and the pages in which he drives home the theory of causal necessity are still worth reading. From his naturalistic principles he inferred that the distinction between nature and art is not fundamental; civilisation is as rational as the savage state. Here he was at one with Aristotle.

[1] Seneca, *Ep.* 124.

> All the successive inventions of the human mind to change or perfect man's mode of existence and render it happier were only the necessary consequence of his essence and that of the existences which act upon him. All we do or think, all we are or shall be, is only an effect of what universal nature has made us. Art is only nature acting by the aid of the instruments which she has fashioned.

Progress, therefore, is natural and necessary, and to criticise or condemn it by appealing to nature is only to divide the house of nature against itself.

If d'Holbach had pressed his logic further, he would have taken a more indulgent and calmer view of the past history of mankind. He would have acknowledged that institutions and opinions to which modern reason may give short shrift were natural and useful in their day, and would have recognised that at any stage of history the heritage of the past is no less necessary to progress than the solvent power of new ideas. Most thinkers of his time were inclined to judge the past career of humanity anachronistically. All the things that had been done or thought which could not be justified in the new age of enlightenment, were regarded as gratuitous and inexcusable errors. The traditions, superstitions, and customs, the whole "code of fraud and woe" transmitted from the past, weighed then too heavily in France to allow the school of reform to do impartial justice to their origins. They felt a sort of resentment against history. D'Alembert said that it would be well if history could be destroyed; and the general tendency was to ignore the social memory and the common heritage of past experiences which mould a human society and make it something very different from a mere collection of individuals.

Belief in Progress, however, took no extravagant form. It did not beguile d'Holbach or any other of the leading thinkers of the Encyclopaedia epoch into optimistic dreams of the future which might await mankind. They had a much clearer conception of obstacles than the good Abbé de Saint-Pierre. Helvétius agrees with d'Holbach that progress will be slow, and Diderot is wavering and sceptical on the question of indefinite social improvement.

6

The reformers of the Encyclopaedia group were not alone in disseminating the idea of Progress. Another group of thinkers, who widely differed in their principles, though some of them had contributed articles to the Encyclopaedia,[1] also did much to make it a power. The rise of the special study of Economics was one of the most significant facts in the general trend of thought towards the analysis of civilisation. Economical students found that in seeking to discover a true theory of the production, distribution, and employment of wealth, they could not avoid the consideration of the constitution and purpose of society. The problems of production and distribution could not be divorced from political theory: production raises the question of the functions of government and the limits of its intervention in trade and industry; distribution involves questions of property, justice, and equality. The employment of riches leads into the domain of morals.

The French Economists or "Physiocrats," as

[1] Quesnay and Turgot, who, though not professedly a Physiocrat, held the same views as the sect.

they were afterwards called, who formed a definite school before 1760—Quesnay the master, Mirabeau, Mercier de la Rivière, and the rest—envisaged their special subject from a wide philosophical point of view; their general economic theory was equivalent to a theory of human society. They laid down the doctrine of a Natural Order in political communities, and from it they deduced their economic teaching.

They assumed, like the Encyclopaedists, that the end of society is the attainment of terrestrial happiness by its members, and that this is the sole purpose of government. The object of a treatise by Mercier de la Rivière[1] (a convenient exposition of the views of the sect) is, in his own words, to discover the natural order for the government of men living in organised communities, which will assure to them temporal felicity: an order in which everything is well, necessarily well, and in which the interests of all are so perfectly and intimately consolidated that all are happy, from the ruler to the least of his subjects.

But in what does this happiness consist? His answer is that "humanly speaking, the greatest happiness possible for us consists in the greatest possible abundance of objects suitable to our enjoyment and in the greatest liberty to profit by them." And liberty is necessary not only to enjoy them but also to produce them in the greatest abundance, since liberty stimulates human efforts. Another condition of abundance is the multiplication of the race; in fact, the happiness of men and their numbers are closely bound up together in the system of

[1] *L'ordre naturel et essentiel des sociétés politiques*, 1767.

nature. From these axioms may be deduced the Natural Order of a human society, the reciprocal duties and rights whose enforcement is required for the greatest possible multiplication of products, in order to procure to the race the greatest sum of happiness with the maximum population.

Now, individual property is the indispensable condition for full enjoyment of the products of human labour; "property is the measure of liberty, and liberty is the measure of property." Hence, to realise general happiness it is only necessary to maintain property and consequently liberty in all their natural extent. The fatal error which has made history what it is has been the failure to recognise this simple fact; for aggression and conquest, the causes of human miseries, violate the law of property which is the foundation of happiness.

The practical inference was that the chief function of government was to protect property and that complete freedom should be left to private enterprise to exploit the resources of the earth. All would be well if trade and industry were allowed to follow their natural tendencies. This is what was meant by *Physiocracy*, the supremacy of the Natural Order. If rulers observed the limits of their true functions, Mercier thought that the moral effect would be immense. "The public system of government is the true education of moral man. *Regis ad exemplum totus componitur orbis.*" [1]

While they advocated a thorough reform of the

[1] The particulars of the Physiocratic doctrine as to the relative values of agriculture and commerce which Adam Smith was soon to criticise do not concern us; nor is it necessary to repeat the obvious criticisms on a theory which virtually reduced the science of society to a science of production and distribution.

principles which ruled the fiscal policy of governments, the Economists were not idealists, like the Encyclopaedic philosophers; they sowed no seeds of revolution. Their starting-point was that which is, not that which ought to be. And, apart from their narrower point of view, they differed from the philosophers in two very important points. They did not believe that society was of human institution, and therefore they did not believe that there could be any deductive science of society based simply on man's nature. Moreover, they held that inequality of condition was one of its immutable features, immutable because it is a consequence of the inequality of physical powers.

But they believed in the future progress of society towards a state of happiness through the increase of opulence which would itself depend on the growth of justice and "liberty"; and they insisted on the importance of the increase and diffusion of knowledge. Their influence in promoting a belief in Progress is vouched for by Condorcet, the friend and biographer of Turgot. As Turgot stands apart from the Physiocrats (with whom indeed he did not identify himself) by his wider views on civilisation, it might be suspected that it is of him that Condorcet was chiefly thinking. Yet we need not limit the scope of his statement when we remember that as a sect the Economists assumed as their first principle the eudaemonic value of civilisation, declared that temporal happiness is attainable, and threw all their weight into the scales against the doctrine of Regress which had found a powerful advocate in Rousseau.

7

By liberty the Economists meant economic liberty. Neither they nor the philosophers nor Rousseau, the father of modern democracy, had any just conception of what political liberty means. They contributed much to its realisation, but their own ideas of it were narrow and imperfect. They never challenged the principle of a despotic government, they only contended that the despotism must be enlightened. The paternal rule of a Joseph or a Catherine, acting under the advice of philosophers, seemed to them the ideal solution of the problem of government; and when the progressive and disinterested Turgot, whom they might regard as one of themselves, was appointed financial minister on the accession of Louis XVI., it seemed that their ideal was about to be realised. His speedy fall dispelled their hopes, but did not teach them the secret of liberty. They had no quarrel with the principle of the censorship, though they writhed under its tyranny; they did not want to abolish it. They only complained that it was used against reason and light, that is against their own writings; and, if the Conseil d'État or the Parlement had suppressed the works of their obscurantist opponents, they would have congratulated themselves that the world was marching quickly towards perfection.

CHAPTER IX

WAS CIVILISATION A MISTAKE?
ROUSSEAU, CHASTELLUX

I

THE optimistic theory of civilisation was not unchallenged by rationalists. In the same year (1750) in which Turgot traced an outline of historical Progress at the Sorbonne, Rousseau laid before the Academy of Dijon a theory of historical Regress. This Academy had offered a prize for the best essay on the question whether the revival of sciences and arts had contributed to the improvement of morals. The prize was awarded to Rousseau. Five years later the same learned body proposed another subject for investigation, the origin of Inequality among men. Rousseau again competed but failed to win the prize, though this second essay was a far more remarkable performance.

The view common to these two discourses, that social development has been a gigantic mistake, that the farther man has travelled from a primitive simple state the more unhappy has his lot become, that civilisation is radically vicious, was not original. Essentially the same issue had been raised in England, though in a different form, by Mandeville's

Fable of the Bees, the scandalous book which aimed at proving that it is not the virtues and amiable qualities of man that are the cement of civilised society, but the vices of its members which are the support of all trades and employments.[1] In these vices, he said, "we must look for the true origin of all arts and sciences"; "the moment evil ceases, the society must be spoiled, if not totally dissolved."

The significance of Mandeville's book lay in the challenge it flung to the optimistic doctrines of Lord Shaftesbury, that human nature is good and all is for the best in this harmonious world. "The ideas he had formed," wrote Mandeville, "of the goodness and excellency of our nature were as romantic and chimerical as they are beautiful and amiable; he laboured hard to unite two contraries that can never be reconciled together, innocence of manners and worldly greatness."

Of these two views Rousseau accepted one and rejected the other. He agreed with Shaftesbury as to the natural goodness of man; he agreed with Mandeville that innocence of manners is incompatible with the conditions of a civilised society. He was an optimist in regard to human nature, a pessimist in regard to civilisation.

In his first *Discourse* he begins by appreciating the specious splendour of modern enlightenment, the voyages of man's intellect among the stars, and then goes on to assever that in the first place men have lost, through their civilisation, the original liberty for which they were born, and that arts and science, flinging garlands of flowers on the iron chains which bind them, make them love their

[1] The expanded edition was published in 1723.

slavery; and secondly that there is a real depravity beneath the fair semblance and "our souls are corrupted as our sciences and arts advance to perfection." Nor is this only a modern phenomenon; "the evils due to our vain curiosity are as old as the world." For it is a law of history that morals fall and rise in correspondence with the progress and decline of the arts and sciences as regularly as the tides answer to the phases of the moon. This "law" is exemplified by the fortunes of Greece, Rome, and China, to whose civilisations the author opposes the comparative happiness of the ignorant Persians, Scythians, and ancient Germans. "Luxury, dissoluteness, and slavery have been always the chastisement of the ambitious efforts we have made to emerge from the happy ignorance in which the Eternal Wisdom had placed us." There is the theological doctrine of the tree of Eden in a new shape.

Rousseau's attempt to show that the cultivation of science produces specific moral evils is feeble, and has little ingenuity; it is a declamation rather than an argument; and in the end he makes concessions which undo the effect of his impeachment. The essay did not establish even a plausible case, but it was paradoxical and suggestive, and attracted more attention than Turgot's thoughtful discourse in the Sorbonne. D'Alembert deemed it worthy of a courteous expression of dissent,[1] and Voltaire satirised it in his *Timon*.

2

In the *Discourse* on Inequality Rousseau dealt

[1] In the *Disc. Prél.* to the Encyclopaedia.

more directly with the effect of civilisation on happiness. He proposed to explain how it came about that right overcame the primitive reign of might, that the strong were induced to serve the weak, and the people to purchase a fancied tranquillity at the price of a real felicity. So he stated his problem; and to solve it he had to consider the "state of nature" which Hobbes had conceived as a state of war and Locke as a state of peace. Rousseau imagines our first savage ancestors living in isolation, wandering in the forests, occasionally co-operating, and differing from the animals only by the possession of a faculty for improving themselves (*la faculté de se perfectionner*). After a stage in which families lived alone in a more or less settled condition, came the formation of groups of families, living together in a definite territory, united by a common mode of life and sustenance, and by the common influence of climate, but without laws or government or any social organisation.

It is this state, which was reached only after a long period, not the original state of nature, that Rousseau considers to have been the happiest period of the human race.

This period of the development of human faculties, holding a just mean between the indolence of the primitive state and the petulant activity of our self-love, must be the happiest and most durable epoch. The more we reflect on it, the more we find that this state was the least exposed to revolutions and the best for man; and that he can have left it only through some fatal chance which, for the common advantage, should never have occurred. The example of the savages who have almost all been found in this state seems to bear out the conclusion that humanity was made to remain in it for ever,

that it was the true youth of the world, and that all further progresses have been so many steps, apparently towards the perfection of the individual, and really towards the decrepitude of the species.

He ascribes to metallurgy and agriculture the fatal resolution which brought this Arcadian existence to an end. Agriculture entailed the origin of property in land. Moral and social inequality were introduced by the man who first enclosed a piece of land and said, This is mine, and found people simple enough to believe him. He was the founder of civil society.

The general argument amounts to this: Man's faculty of improving himself is the source of his other faculties, including his sociability, and has been fatal to his happiness. The circumstances of his primeval life favoured the growth of this faculty, and in making man sociable they made him wicked; they developed the reason of the individual and thereby caused the species to deteriorate. If the process had stopped at a certain point, all would have been well; but man's capacities, stimulated by fortuitous circumstances, urged him onward, and leaving behind him the peaceful Arcadia where he should have remained safe and content, he set out on the fatal road which led to the calamities of civilisation. We need not follow Rousseau in his description of those calamities which he attributes to wealth and the artificial conditions of society. His indictment was too general and rhetorical to make much impression. In truth, a more powerful and comprehensive case against civilised society was drawn up about the same time, though with a very different motive, by one whose thought repre-

sented all that was opposed to Rousseau's teaching. Burke's early work, *A Vindication of Natural Society*,[1] was written to show that all the objections which Deists like Bolingbroke urged against artificial religion could be brought with greater force against artificial society, and he worked out in detail a historical picture of the evils of civilisation which is far more telling than Rousseau's generalities.

3

If civilisation has been the curse of man, it might seem that the logical course for Rousseau to recommend was its destruction. This was the inference which Voltaire drew in *Timon*, to laugh the whole theory out of court. But Rousseau did not suggest a movement to destroy all the libraries and all the works of art in the world, to put to death or silence all the savants, to pull down the cities, and burn the ships. He was not a mere dreamer, and his Arcadia was no more than a Utopian ideal, by the light of which he conceived that the society of his own day might be corrected and transformed. He attached his hopes to equality, democracy, and a radical change in education.

Equality: this revolutionary idea was of course quite compatible with the theory of Progress, and was soon to be closely associated with it. But it is easy to understand that the two ideas should first have appeared in antagonism to each other. The advance of knowledge and the increase of man's power over nature had virtually profited only a minority. When Fontenelle or Voltaire vaunted the illumination of their age and glorified the modern

[1] A.D. 1756.

revolution in scientific thought, they took account only of a small class of privileged people. Higher education, Voltaire observed, is not for cobblers or kitchenmaids; "on n'a jamais prétendu éclairer les cordonniers et les servantes." The theory of Progress had so far left the masses out of account. Rousseau contrasted the splendour of the French court, the luxury of the opulent, the enlightenment of those who had the opportunity of education, with the hard lot of the ignorant mass of peasants, whose toil paid for the luxury of many of the idle enlightened people who amused themselves at Paris. The horror of this contrast, which left Voltaire cold, was the poignant motive which inspired Rousseau, a man of the people, in constructing his new doctrine. The existing inequality seemed an injustice which rendered the self-complacency of the age revolting. If this is the result of progressive civilisation, what is progress worth? The next step is to declare that civilisation is the *causa malorum* and that what is named progress is really regress. But Rousseau found a way of circumventing pessimism. He asked himself, cannot equality be realised in an organised state, founded on natural right? The *Social Contract* was his answer, and there we can see the living idea of equality detaching itself from the dead theory of degradation.

Arcadianism, which was thus only a side-issue for Rousseau, was the extreme expression of tendencies which appear in the speculations of other thinkers of the day. Morelly and Mably argued in favour of a reversion to simpler forms of life. They contemplated the foundation of socialistic communities by reviving institutions and practices which

belonged to a past period of social evolution. Mably, inspired by Plato, thought it possible by legislation to construct a state of antique pattern. They ascribed evils of civilisation to inequality arising from the existence of private property, but Morelly rejected the view of the "bold sophist" Rousseau that science and art were to blame. He thought that aided by science and learning man might reach a state based on communism, resembling the state of nature but more perfect, and he planned an ideal constitution in his romance of the *Floating Islands*.[1] Different as these views were, they represent the idea of regress; they imply a condemnation of the tendencies of actual social development and recommend a return to simpler and more primitive conditions.

Even Diderot, though he had little sympathy with Utopian speculations, was attracted by the idea of the simplification of society, and met Rousseau so far as to declare that the happiest state was a mean between savage and civilised life.

> "I am convinced," he wrote, "that the industry of man has gone too far and that if it had stopped long ago and if it were possible to simplify the results, we should not be the worse. I believe there is a limit in civilisation, a limit more conformable to the felicity of man in general and far less distant from the savage state than is imagined; but how to return to it, having left it, or how to remain in it, if we were there? I know not."

His picture of the savages of Tahiti in the *Supplément au voyage de Bougainville* was not seriously

[1] *Naufrage des isles flottantes ou Basiliade du célèbre Pilpaï* (1753). It begins: "je chante le règne aimable de la Vérité et de la Nature." Morelly's other work, *Code de la Nature*, appeared in 1755.

meant, but it illustrates the fact that in certain moods he felt the fascination of Rousseau's Arcadia.

D'Holbach met all these theories by pointing out that human development, from the "state of nature" to social life and the ideas and commodities of civilisation, is itself natural, given the innate tendency of man to improve his lot. To return to the simpler life of the forests—or to any bygone stage—would be *dénaturer l'homme*, it would be contrary to nature; and if he could do so, it would only be to recommence the career begun by his ancestors and pass again through the same successive phases of history.

There was, indeed, one question which caused some embarrassment to believers in Progress. The increase of wealth and luxury was evidently a salient feature in modern progressive states; and it was clear that there was an intimate connection between the growth of knowledge and the growth of commerce and industrial arts, and that the natural progress of these meant an ever-increasing accumulation of riches and the practice of more refined luxury. The question, therefore, whether luxury is injurious to the general happiness occupied the attention of the philosophers. If it is injurious, does it not follow that the forces on which admittedly Progress depends are leading in an undesirable direction? Should they be obstructed, or is it wiser to let things follow their natural tendency (*laisser aller les choses suivant leur pente naturelle*)? Voltaire accepted wealth with all its consequences. D'Holbach proved to his satisfaction that luxury always led to the ruin of nations. Diderot and Helvétius arrayed the arguments which could be

urged on both sides. Perhaps the most reasonable contribution to the subject was an essay of Hume.

4

It is obvious that Rousseau and all other theorists of Regress would be definitely refuted if it could be proved by an historical investigation that in no period in the past had man's lot been happier than in the present. Such an inquiry was undertaken by the Chevalier de Chastellux. His book *On Public Felicity, or Considerations on the lot of Men in the various Epochs of History*, appeared in 1772 and had a wide circulation.[1] It is a survey of the history of the western world and aims at proving the certainty of future Progress. It betrays the influence both of the Encyclopaedists and of the Economists. Chastellux is convinced that human nature can be indefinitely moulded by institutions; that enlightenment is a necessary condition of general happiness; that war and superstition, for which governments and priests are responsible, are the principal obstacles.

But he attempted to do what none of his masters had done, to test the question methodically from the data of history. Turgot, and Voltaire in his way, had traced the growth of civilisation; the originality of Chastellux lay in concentrating attention on the eudaemonic issue, in examining each historical period for the purpose of discovering whether people on the whole were happy and enviable. Has there ever been a time, he inquired, in which public felicity was greater than in our own, in which it would have been desirable to remain for

[1] There was a new edition in 1776 with an important additional chapter.

ever, and to which it would now be desirable to return?

He begins by brushing away the hypothesis of an Arcadia. We know really nothing about primitive man, there is not sufficient evidence to authorise conjectures. We know man only as he has existed in organised societies, and if we are to condemn modern civilisation and its prospects, we must find our term of comparison not in an imaginary golden age but in a known historical epoch. And we must be careful not to fall into the mistakes of confusing public prosperity with general happiness, and of considering only the duration or aggrandisement of empires and ignoring the lot of the common people.

His survey of history is summary and superficial enough. He gives reasons for believing that no peoples from the ancient Egyptians and Assyrians to the Europeans of the Renaissance can be judged happy. Yet what about the Greeks? Theirs was an age of enlightenment. In a few pages he examines their laws and history, and concludes, "We are compelled to acknowledge that what is called the *bel âge* of Greece was a time of pain and torture for humanity." And in ancient history, generally, "slavery alone sufficed to make man's condition a hundred times worse than it is at present." The miseries of life in the Roman period are even more apparent than in the Greek. What Englishman or Frenchman would tolerate life as lived in ancient Rome? It is interesting to remember that four years later an Englishman who had an incomparably wider and deeper knowledge of history declared it to be probable that in the

age of the Antonines civilised Europe enjoyed greater happiness than at any other period.

Rome declined and Christianity came. Its purpose was not to render men happy on earth, and we do not find that it made rulers less avaricious or less sanguinary, peoples more patient or quiet, crimes rarer, punishments less cruel, treaties more faithfully observed, or wars waged more humanely. The conclusion is that it is only those who are profoundly ignorant of the past who can regret "the good old times."

Throughout this survey Chastellux does not, like Turgot, make any attempt to show that the race was progressing, however slowly. On the contrary, he sets the beginning of continuous Progress in the Renaissance—here agreeing with d'Alembert and Voltaire. The intellectual movement, which originated then and resulted in the enlightenment of his own day, was a condition of social progress. But alone it would not have been enough, as is proved by the fact that the intellectual brilliancy of the great age of Greece exerted no beneficent effects on the well-being of the people. Nor indeed was there any perceptible improvement in the prospect of happiness for the people at large during the sixteenth and seventeenth centuries, notwithstanding the progress of science and the arts. But the terrible wars of this period exhausted Europe, and this financial exhaustion has supplied the requisite conditions for attaining a measure of felicity never realised in the past.

Peace is an advantageous condition for the progress of reason, but especially when it is the result of the exhaustion of peoples and their satiety of fighting.

Frivolous ideas disappear; political bodies, like organisms, have the care of self-preservation impressed upon them by pain; the human mind, hitherto exercised on agreeable objects, falls back with more energy on useful objects; a more successful appeal can be made to the rights of humanity; and princes, who have become creditors and debtors of their subjects, permit them to be happy in order that they may be more solvent or more patient.

This is not very lucid or convincing; but the main point is that intellectual enlightenment would be ineffective without the co-operation of political events, and no political events would permanently help humanity without the progress of knowledge.

Public felicity consists—Chastellux follows the Economists—in external and domestic peace, abundance and liberty, the liberty of tranquil enjoyment of one's own; and ordinary signs of it are flourishing agriculture, large populations, and the growth of trade and industry. He is at pains to show the superiority of modern to ancient agriculture, and he avails himself of the researches of Hume to prove the comparatively greater populousness of modern European countries. As for the prospect of peace, he takes a curiously optimistic view. A system of alliances has made Europe a sort of confederated republic, and the balance of power has rendered the design of a universal monarchy, such as that which Louis XIV. essayed, a chimera. All the powerful nations are burdened with debt. War, too, is a much more difficult enterprise than it used to be; every campaign of the king of Prussia has been more arduous than all the conquests of Attila. It looks

as if the Peace of 1762–3 possessed elements of finality. The chief danger he discerns in the overseas policy of the English—*auri sacra fames.* Divination of this kind has never been happy; a greater thinker, Auguste Comte, was to venture on more dogmatic predictions of the cessation of wars, which the event was no less utterly to belie.

As for equality among men, Chastellux admits its desirability, but observes that there is pretty much the same amount of happiness (*le bonheur se compense assez*) in the different classes of society. "Courtiers and ministers are not happier than husbandmen and artisans." Inequalities and disproportions in the lots of individuals are not incompatible with a positive measure of felicity. They are inconveniences incident to the perfectibility of the species, and they will be eliminated only when Progress reaches its final term. The best that can be done to remedy them is to accelerate the Progress of the race which will conduct it one day to the greatest possible happiness; not to restore a state of ignorance and simplicity, from which it would again escape.

The general argument of the book may be resumed briefly. Felicity has never been realised in any period of the past. No government, however esteemed, set before itself to achieve what ought to be the sole object of government, "the greatest happiness of the greatest number of individuals." Now, for the first time in human history, intellectual enlightenment, other circumstances fortunately concurring, has brought about a condition of things, in which this object can no longer be ignored, and there is a prospect that it

will gradually gain the ascendant. In the meantime, things have improved; the diffusion of knowledge is daily ameliorating men's lot, and far from envying any age in the past we ought to consider ourselves much happier than the ancients.

We may wonder at this writer's easy confidence in applying the criterion of happiness to different societies. Yet the difficulty of such comparisons was, I believe, first pointed out by Comte. It is impossible, he says, to compare two states of society and determine that in one more happiness was enjoyed than in the other. The happiness of an individual requires a certain degree of harmony between his faculties and his environment. But there is always a natural tendency towards the establishment of such an equilibrium, and there is no means of discovering by argument or by direct experience the situation of a society in this respect. Therefore, he concludes, the question of happiness must be eliminated from any scientific treatment of civilisation.

Chastellux won a remarkable success. His work was highly praised by Voltaire, and was translated into English, Italian, and German. It condensed, on a single issue, the optimistic doctrines of the philosophers, and appeared to give them a more solid historical foundation than Voltaire's *Essay on Manners* had supplied. It provided the optimists with new arguments against Rousseau, and must have done much to spread and confirm faith in perfectibility.

CHAPTER X

THE YEAR 2440

I

THE leaders of thought in France did not look far forward into the future or attempt to trace the definite lines on which the human race might be expected to develop. They contented themselves with principles and vague generalities, and they had no illusions as to the slowness of the process of social amelioration; a rational morality, the condition of improvement, was only in its infancy. A passage in a work of the Abbé Morellet probably reflects faithfully enough the comfortable though not extravagant optimism which was current.

Let us hope for the amelioration of man's lot as a consequence of the progress of the enlightenment (*des lumières*) and labours of the educated (*des gens instruits*); let us trust that the errors and even the injustices of our age may not rob us of this consoling hope. The history of society presents a continuous alternation of light and darkness, reason and extravagance, humanity and barbarism; but in the succession of ages we can observe good gradually increasing in ever greater proportion. What educated man, if he is not a misanthrope or misled by vain declamations, would really wish he had lived in the barbarous and poetical time which Homer paints in such fair and terrifying colours? Who regrets that he

was not born at Sparta among those pretended heroes who made it a virtue to insult nature, practised theft, and gloried in the murder of a Helot; or at Carthage, the scene of human sacrifices, or at Rome amid the proscriptions or under the rule of a Nero or a Caligula? Let us agree that man advances, though slowly, towards light and happiness.

But though the most influential writers were sober in speculating about the future, it is significant of their effectiveness in diffusing the idea of Progress that now for the first time a prophetic Utopia was constructed. Hitherto, as I have before observed, ideal states were either projected into the remote past or set in some distant, vaguely-known region, where fancy could build freely. To project them into the future was a new thing, and when in 1770 Sébastien Mercier described what human civilisation would be in A.D. 2440, it was a telling sign of the power which the idea of Progress was beginning to exercise.

2

Mercier has been remembered, or rather forgotten, as an inferior dramatist. He was a good deal more, and the researches of M. Béclard into his life and works enable us to appreciate him. If it is an overstatement to say that his soul reflected in miniature the very soul of his age,[1] he was assuredly one of its characteristic products. He reminds us in some ways of the Abbé de Saint-Pierre, who was one of his heroes. All his activities were urged by the dream of a humanity regenerated

[1] L. Béclard, *Sébastien Mercier, sa vie, son œuvre, son temps* (1903), p. vii.

by reason, all his energy devoted to bringing about its accomplishment. Saint-Pierre's idea of perpetual peace inspired an early essay on the scourge of war.

The theories of Rousseau exercised at first an irresistible attraction, but modern civilisation had too strong a hold on him; he was too Parisian in temper to acquiesce for long in the doctrine of Arcadianism. He composed a book on *The Savage* to illustrate the text that the true standard of morality is the heart of primitive man, and to prove that the best thing we could do is to return to the forest; but in the process of writing it he seems to have come to the conclusion that the whole doctrine was fallacious. The transformation of his opinions was the work of a few months. He then came forward with the opposite thesis that all events have been ordered for man's felicity, and he began to work on an imaginary picture of the state to which man might find his way within seven hundred years.

L'an 2440 was published anonymously at Amsterdam in 1770. Its circulation in France was rigorously forbidden, because it implied a merciless criticism of the administration. It was reprinted in London and Neuchâtel, and translated into English and German.

3

As the motto of his prophetic vision Mercier takes the saying of Leibnitz that "the present is pregnant of the future." Thus the phase of civilisation which he imagines is proposed as the outcome of the natural and inevitable march of history.

The world of A.D. 2440 in which a man born in the eighteenth century who has slept an enchanted sleep awakes to find himself, is composed of nations who live in a family concord rarely interrupted by war. But of the world at large we hear little; the imagination of Mercier is concentrated on France, and particularly Paris. He is satisfied with knowing that slavery has been abolished; that the rivalry of France and England has been replaced by an indestructible alliance; that the Pope, whose authority is still august, has renounced his errors and returned to the customs of the primitive Church; that French plays are performed in China. The changes in Paris are a sufficient index of the general transformation.

The constitution of France is still monarchical. Its population has increased by one half; that of the capital remains about the same. Paris has been rebuilt on a scientific plan; its sanitary arrangements have been brought to perfection; it is well lit; and every provision has been made for the public safety. Private hospitality is so large that inns have disappeared, but luxury at table is considered a revolting crime. Tea, coffee, and tobacco are no longer imported.[1] There is no system of credit; everything is paid for in ready money, and this practice has led to a remarkable simplicity in dress. Marriages are contracted only through mutual inclination; dowries have been abolished. Education is governed by the ideas of Rousseau, and is directed, in a narrow spirit, to the promotion of morality. Italian, German, English, and Spanish are taught in schools, but the study of the classical

[1] In the first edition of the book commerce was abolished.

languages has disappeared; Latin does not help a man to virtue. History too is neglected and discouraged, for it is "the disgrace of humanity, every page being crowded with crimes and follies." Theatres are government institutions, and have become the public schools of civic duties and morality.

The literary records of the past had been almost all deliberately destroyed by fire. It was found expedient to do away with useless and pernicious books which only obscured truth or contained perpetual repetitions of the same thing. A small closet in the public library sufficed to hold the ancient books which were permitted to escape the conflagration, and the majority of these were English. The writings of the Abbé de Saint-Pierre were placed next those of Fénelon. "His pen was weak, but his heart was sublime. Seven ages have given to his great and beautiful ideas a just maturity. His contemporaries regarded him as a visionary; his dreams, however, have become realities."

The importance of men of letters as a social force was a favourite theme of Mercier, and in A.D. 2440 this will be duly recognised. But the State control which weighed upon them so heavily in 1770 is not to be entirely abolished. There is no preventive censorship to hinder publication, but there are censors. There are no fines or imprisonment, but there are admonitions. And if any one publishes a book defending principles which are considered dangerous, he is obliged to go about in a black mask.

There is a state religion, Deism. There is

probably no one who does not believe in God. But if any atheist were discovered, he would be put through a course of experimental physics. If he remained obdurate in his rejection of a "palpable and salutary truth," the nation would go into mourning and banish him from its borders.

Every one has to work, but labour no longer resembles slavery. As there are no monks, nor numerous domestics, nor useless valets, nor workmen employed on the production of childish luxuries, a few daily hours of labour are sufficient for the public wants. Censors inquire into men's capacities, assign tasks to the unemployed, and if a man be found fit for nothing but the consumption of food he is banished from the city.

These are some of the leading features of the ideal future to which Mercier's imagination reached. He did not put it forward as a final term. Later ages, he said, will go further, for "where can the perfectibility of man stop, armed with geometry and the mechanical arts and chemistry?" But in his scanty prophecies of what science might effect he showed curiously little resource. The truth is that this had not much interest for him, and he did not see that scientific discoveries might transmute social conditions. The world of 2440, its intolerably docile and virtuous society, reflects two capital weaknesses in the speculation of the Encyclopaedist period: a failure to allow for the strength of human passions and interests, and a deficient appreciation of the meaning of liberty. Much as the reformers acclaimed and fought for toleration, they did not generally comprehend the value of the principle. They did

not see that in a society organised and governed by Reason and Justice themselves, the unreserved toleration of false opinions would be the only palladium of progress; or that a doctrinaire State, composed of perfectly virtuous and deferential people, would arrest development and stifle originality, by its ungenial if mild tyranny. Mercier's is no exception to the rule that ideal societies are always repellent; and there are probably few who would not rather be set down in Athens in the days of the "vile" Aristophanes, whose works Mercier condemned to the flames, than in his Paris of 2440.

4

That Bohemian man of letters, Restif de la Bretonne, whose unedifying novels the Parisians of 2440 would assuredly have rejected from their libraries, published in 1790 a heroic comedy representing how marriages would be arranged in "the year 2000," by which epoch he conceived that all social equalities would have disappeared in a fraternal society and twenty nations be allied to France under the wise supremacy of "our well-beloved monarch Louis François XXII." It was the Revolution that converted Restif to the conception of Progress, for hitherto his master had been Rousseau; but it can hardly be doubted that the *motif* and title of his play were suggested by the romance of Mercier. *L'an 2440* and *L'an 2000* are the first examples of the prophetic fiction which Mr. Edward Bellamy's *Looking Backward* was to popularise a hundred years later.

The Count de Volney's *Ruins* was another

popular presentation of the hopes which the theory of Progress had awakened in France. Although the work was not published till after the outbreak of the Revolution,[1] the plan had been conceived some years before. Volney was a traveller, deeply interested in oriental and classical antiquities, and, like Louis Le Roy, he approached the problem of man's destinies from the point of view of a student of the revolutions of empires.

The book opens with melancholy reflections amid the ruins of Palmyra. "Thus perish the works of men, and thus do nations and empires vanish away. . . . Who can assure us that desolation like this will not one day be the lot of our own country?" Some traveller like himself will sit by the banks of the Seine, the Thames, or the Zuyder Zee, amid silent ruins, and weep for a people inurned and their greatness changed into an empty name. Has a mysterious Deity pronounced a secret malediction against the earth?

In this disconsolate mood he is visited by an apparition, who unveils the causes of men's misfortunes and shows that they are due to themselves. Man is governed by natural invariable laws, and he has only to study them to know the springs of his destiny, the causes of his evils and their remedies. The laws of his nature are self-love, desire of happiness, and aversion to pain; these are the simple and prolific principles of everything that happens in the moral world. Man is the artificer of his own fate. He may lament his weakness and folly; but "he has perhaps still more

[1] *Les Ruines des empires*, 1789. An English translation ran to a second edition (1795).

reason to be confident in his energies when he recollects from what point he has set out and to what heights he has been capable of elevating himself."

The supernatural visitant paints a rather rosy picture of the ancient Egyptian and Assyrian kingdoms. But it would be a mistake to infer from their superficial splendour that the inhabitants generally were wise or happy. The tendency of man to ascribe perfection to past epochs is merely "the discoloration of his chagrin." The race is not degenerating; its misfortunes are due to ignorance and the mis-direction of self-love. Two principal obstacles to improvement have been the difficulty of transmitting ideas from age to age, and that of communicating them rapidly from man to man. These have been removed by the invention of printing. The press is "a memorable gift of celestial genius." In time all men will come to understand the principles of individual happiness and public felicity. Then there will be established among the peoples of the earth an equilibrium of forces; there will be no more wars, disputes will be decided by arbitration, and "the whole species will become one great society, a single family governed by the same spirit and by common laws, enjoying all the felicity of which human nature is capable." The accomplishment of this will be a slow process, since the same leaven will have to assimilate an enormous mass of heterogeneous elements, but its operation will be effectual.

Here the genius interrupts his prophecy and exclaims, turning toward the west, "The cry of liberty uttered on the farther shores of the Atlantic

has reached to the old continent." A prodigious movement is then visible to their eyes in a country at the extremity of the Mediterranean; tyrants are overthrown, legislators elected, a code of laws is drafted on the principles of equality, liberty, and justice. The liberated nation is attacked by neighbouring tyrants, but her legislators propose to the other peoples to hold a general assembly, representing the whole world, and weigh every religious system in the balance. The proceedings of this congress follow, and the book breaks off incomplete.

It is not an arresting book; to a reader of the present day it is positively tedious; but it suited contemporary taste, and, appearing when France was confident that her Revolution would renovate the earth, it appealed to the hopes and sentiments of the movement. It made no contribution to the doctrine of Progress, but it undoubtedly helped to popularise it.

CHAPTER XI

THE FRENCH REVOLUTION: CONDORCET

I

THE authority which the advanced thinkers of France gained among the middle classes during the third quarter of the eighteenth century was promoted by the influence of fashion. The new ideas of philosophers, rationalists, and men of science had interested the nobles and higher classes of society for two generations, and were a common subject of discussion in the most distinguished salons. Voltaire's intimacy with Frederick the Great, the relations of d'Alembert and Diderot with the Empress Catherine, conferred on these men of letters, and on the ideas for which they stood, a prestige which carried great weight with the bourgeoisie. Humbler people, too, were as amenable as the great to the seduction of theories which supplied simple keys to the universe,[1] and assumed that everybody was capable of judging for himself on the most difficult problems. As well as the Encyclopaedia, the works of nearly all the leading thinkers were written for the general public,

[1] Taine said of the *Contrat Social* that it reduces political science to the strict application of an elementary axiom which renders all study unnecessary (*La Révolution*, vol. i. c. iv. § iii.).

not merely for philosophers. The policy of the Government in suppressing these dangerous publications did not hinder their diffusion, and gave them the attraction of forbidden fruit. In 1770 the avocat général (Séguier) acknowledged the futility of the policy. "The philosophers," he said, "have with one hand sought to shake the throne, with the other to upset the altars. Their purpose was to change public opinion on civil and religious institutions, and the revolution has, so to speak, been effected. History and poetry, romances and even dictionaries, have been infected with the poison of incredulity. Their writings are hardly published in the capital before they inundate the provinces like a torrent. The contagion has spread into workshops and cottages."[1]

The contagion spread, but the official who wrote these words did not see that it was successful because it was opportune, and that the minds of men were prepared to receive the seed of revolutionary ideas by the unspeakable corruption of the Government and the Church. As Voltaire remarked about the same time, France was becoming Encyclopaedist, and Europe too.

2

The influence of the subversive and rationalistic thinkers in bringing about the events of 1789 has been variously estimated by historians. The truth probably lies in the succinct statement of Acton that "the confluence of French theory with American example caused the Revolution to break out" when it did. The theorists aimed at reform, not at

[1] Rocquain, *L'Esprit révolutionnaire avant la Révolution*, p. 278.

political revolution ; and it was the stimulus of the Declaration of Rights of 1774 and the subsequent victory of the Colonies that precipitated the convulsion, at a time when the country had a better prospect of improvement than it ever had before 1774, when Louis XVI. came to the throne. But the theories had prepared France for radical changes, and they guided the phases of the Revolution. The leaders had all the optimism of the Encyclopaedists; yet the most powerful single force was Rousseau, who, though he denied Progress and blasphemed civilisation, had promulgated the doctrine of the sovereignty of the people, giving it an attractive appearance of mathematical precision ; and to this doctrine the revolutionaries attached their optimistic hopes.[1] The theory of equality seemed no longer merely speculative; for the American constitution was founded on democratic equality, whereas the English constitution, which before had seemed the nearest approximation to the ideal of freedom, was founded on inequality. The philosophical polemic of the masters was waged with weapons of violence by the disciples. Chaumette and Hébert, the followers of d'Holbach, were destroyed by the disciples of Rousseau. In the name of the creed of the *Vicaire Savoyard* the Jacobin Club shattered the bust of Helvétius. Mably and Morelly had their disciples in Babeuf and the socialists.

A naïve confidence that the political upheaval meant regeneration and inaugurated a reign of

[1] It is interesting to observe how Robespierre, to whom the doctrines of Rousseau were oracles, could break out into admiration of the progress of civilised man, as he did in the opening passage of his speech of 7th May 1794, proposing the decree for the worship of the Supreme Being (see the text in Stephen, *Orators of the French Revolution*, ii. 391-92).

justice and happiness pervaded France in the first period of the Revolution, and found a striking expression in the ceremonies of the universal "Federation" in the Champ-de-Mars on 14th July 1790. The festival was theatrical enough, decreed and arranged by the Constituent Assembly, but the enthusiasm and optimism of the people who gathered to swear loyalty to the new Constitution were genuine and spontaneous. Consciously or subconsciously they were under the influence of the doctrine of Progress which leaders of opinion had for several decades been insinuating into the public mind. It did not occur to them that their oaths and fraternal embraces did not change their minds or hearts, and that, as Taine remarked, they remained what ages of political subjection and one age of political literature had made them. The assumption that new social machinery could alter human nature and create a heaven upon earth was to be swiftly and terribly confuted.

> Post uarios casus et tot discrimina rerum
> uenimus in Latium,

but Latium was to be the scene of sanguinary struggles.

Another allied and fundamental fallacy, into which all the philosophers and Rousseau had more or less fallen, was reflected and exposed by the Revolution. They had considered man *in vacuo*. They had not seen that the whole development of a society is an enormous force which cannot be talked or legislated away; they had ignored the power of social memory and historical traditions, and misvalued the strength of the links which bind genera-

tions together. So the Revolutionaries imagined that they could break abruptly with the past, and that a new method of government, constructed on mathematical lines, a constitution (to use words of Burke) "ready made and ready armed, mature in its birth, a perfect goddess of wisdom and of war, hammered by our blacksmith midwives out of the brain of Jupiter himself," would create a condition of idyllic felicity in France, and that the arrival of the millennium depended only on the adoption of the same principles by other nations. The illusions created by the Declaration of the Rights of Man on the 4th of August died slowly under the shadow of the Terror; but though the hopes of those who believed in the speedy regeneration of the world were belied, some of the thoughtful did not lose heart. There was one at least who did not waver in his faith that the movement was a giant's step on the path of man towards ultimate felicity, however far he had still to travel. Condorcet, one of the younger Encyclopaedists, spent the last months of his life, under the menace of the guillotine, in projecting a history of human Progress.

3

Condorcet was the friend and biographer of Turgot, and it was not unfitting that he should resume the design of a history of civilisation, in the light of the idea of Progress, for which Turgot had only left luminous suggestions. He did not execute the plan, but he completed an elaborate sketch in which the controlling ideas of the scheme are fully set forth. His principles are to be found almost entirely in Turgot. But they have a new significance

for Condorcet. He has given them wings. He has emphasised, and made deductions. Turgot wrote in the calm spirit of an inquirer. Condorcet spoke with the verve of a prophet. He was prophesying under the shadow of death. It is amazing that the optimistic *Sketch of a Historical Picture of the Progress of the Human Mind* should have been composed when he was hiding from Robespierre in 1793.[1]

Condorcet was penetrated with the spirit of the Encyclopaedists, of whom he had been one, and his attitude to Christianity was that of Voltaire and Diderot. Turgot had treated the received religion respectfully. He had acknowledged Providence, and, though the place which he assigned to Providence was that of a sort of honorary President of the development of civilisation who might disappear without affecting the proceedings, there was a real difference between his views and those of his friend as to the *rôle* of Christianity and the civilisation of the Middle Ages.

A more important difference between the two thinkers is connected with the different circumstances in which they wrote. Turgot did not believe in the necessity of violent changes; he thought that steady reforms under the existing régime would do wonders for France. Before the Revolution Condorcet had agreed, but he was swept away by its enthusiasm. The victory of liberty in America and the increasing volume of the movement against slavery—one of the causes which most deeply stirred his heart—had heightened his natural optimism and confirmed his faith in the dogma of Progress. He felt the

[1] Published in 1795.

exhilaration of the belief that he was living through "one of the greatest revolutions of the human race," and he deliberately designed his book to be opportune to a crisis of mankind, at which "a picture of revolutions of the past will be the best guide."

Feeling that he is personally doomed, he consoles himself with brooding on the time, however remote, when the sun will shine "on an earth of none but freemen, with no master save reason ; for tyrants and slaves, priests and their stupid or hypocritical tools, will all have disappeared." He is not satisfied with affirming generally the certainty of an indefinite progress in enlightenment and social welfare. He sets himself to think out its nature, to forecast its direction, and determine its goal, and insists, as his predecessors had never done, on the prospects of the distant future.

4

His ambitious design is, in his own words, to show "the successive changes in human society, the influence which each instant exerts on the succeeding instant, and thus, in its successive modifications, the advance of the human species towards truth or happiness." Taken literally, this is an impossible design, and to put it forward as a practical proposition is as if a man were to declare his intention of writing a minute diary of the life of Julius Caesar from his birth to his death. By stating his purpose in such terms, Condorcet reveals that he had no notion of the limitations which confine our knowledge of the past, and that even if he had conceived a more modest and practicable programme he would have been incapable of executing it. His formula,

however, is worth remembering. For the unattainable ideal which it expresses reminds us how many periods and passages of human experience must always remain books with seven seals.

Condorcet distinguished ten periods of civilisation, of which the tenth lies in the future, but he has not justified his divisions and his epochs are not co-ordinate in importance. Yet his arrangement of the map of history is remarkable as an attempt to mark its sections not by great political changes but by important steps in knowledge. The first three periods—the formation of primitive societies, followed by the pastoral age, and the agricultural age—conclude with the invention of alphabetic writing in Greece. The fourth is the history of Greek thought, to the definite division of the sciences in the time of Aristotle. In the fifth knowledge progresses and suffers obscuration under Roman rule, and the sixth is the dark age which continues to the time of the Crusades. The significance of the seventh period is to prepare the human mind for the revolution which would be achieved by the invention of printing, with which the eighth period opens. Some of the best pages of the book develop the vast consequences of this invention. The scientific revolution effected by Descartes begins a new period, which is now closed by the creation of the French Republic.

The idea of the progress of knowledge had created the idea of social Progress and remained its foundation. It was therefore logical and inevitable that Condorcet should take advance in knowledge as the clew to the march of the human race. The history of civilisation is the history of enlightenment.

Turgot had justified this axiom by formulating the cohesion of all modes of social activity. Condorcet insists on "the indissoluble union" between intellectual progress and that of liberty, virtue, and the respect for natural rights, and on the effect of science in the destruction of prejudice. All errors in politics and ethics have sprung, he asserts, from false ideas which are closely connected with errors in physics and ignorance of the laws of nature. And in the new doctrine of Progress he sees an instrument of enlightenment which is to give "the last blow to the tottering edifice of prejudices."

It would not be useful to analyse Condorcet's sketch or dwell on his obsolete errors and the defects of his historical knowledge. His slight picture of the Middle Ages reflects the familiar view of all the eighteenth century philosophers. The only contribution to social amelioration which he can discover in a period of nearly a millennium is the abolition of domestic slavery. And so this period appears as an interruption of the onward march. His inability to appreciate the historical *rôle* of the Roman Empire exhibits more surprising ignorance and prejudice. But these particular defects are largely due to a fundamental error which runs through his whole book and was inherent in the social speculations of the Encyclopaedists. Condorcet, like all his circle, ignored the preponderant part which institutions have played in social development. So far as he considered them at all, he saw in them obstacles to the free play of human reason; not the spontaneous expression of a society corresponding to its needs or embodying its ideals, but rather machinery deliberately contrived for oppressing the

masses and keeping them in chains. He did not see that if the Progress in which he believed is a reality, its possibility depends on the institutions and traditions which give to societies their stability. In the following generation, it would be pointed out that he fell into a manifest contradiction when he praised the relative perfection reached in some European countries in the eighteenth century, and at the same time condemned as eminently retrograde all the doctrines and institutions which had been previously in control.[1] This error is closely connected with the other error, previously noticed, of conceiving man abstracted from his social environment and exercising his reason *in vacuo*.

5

The study of the history of civilisation has, in Condorcet's eyes, two uses. It enables us to establish the fact of Progress, and it should enable us to determine its direction in the future, and thereby to accelerate the rate of progression.

By the facts of history and the arguments they suggest, he undertakes to show that nature has set no term to the process of improving human faculties, and that the advance towards perfection is limited only by the duration of the globe. The movement may vary in velocity, but it will never be retrograde so long as the earth occupies its present place in the cosmic system and the general laws of this system do not produce some catastrophe or change which would deprive the human race of the faculties and resources which it has hitherto possessed. There will be no relapse into barbarism. The guarantees

[1] Comte, *Cours de philosophie positive*, iv. 258.

against this danger are the discovery of true methods in the physical sciences, their application to the needs of men, the lines of communication which have been established among them, the great number of those who study them, and finally the art of printing. And if we are sure of the continuous progress of enlightenment, we may be sure of the continuous improvement of social conditions.

It is possible to foresee events, if the general laws of social phenomena are known, and these laws can be inferred from the history of the past. By this statement Condorcet justifies his bold attempt to sketch his tenth period of human history which lies in the future; and announces the idea which was in the next generation to be worked out by Comte. But he cannot be said to have deduced himself any law of social development. His forecast of the future is based on the ideas and tendencies of his own age.

Apart from scientific discoveries and the general diffusion of a knowledge of the laws of nature on which moral improvement depends, he includes in his prophetic vision the cessation of war and the realisation of the less familiar idea of the equality of the sexes. If he were alive to-day, he could point with triumph to the fact that of these far-reaching projects one is being accomplished in some of the most progressive countries and the other is looked upon as an attainable aim by statesmen who are not visionaries. The equality of the sexes was only a logical inference from the general doctrine of equality to which Condorcet's social theory is reducible. For him the goal of political progress is equality; equality is to be the aim of social effort —the ideal of the Revolution.

For it is the multitude of men that must be considered—the mass of workers, not the minority who live on their labours. Hitherto they have been neglected by the historian as well as by the statesman. The true history of humanity is not the history of some men. The human race is formed by the mass of families who subsist almost entirely on the fruits of their own work, and this mass is the proper subject of history, not great men.

You may establish social equality by means of laws and institutions, yet the equality actually enjoyed may be very incomplete. Condorcet recognises this and attributes it to three principal causes: inequality in wealth; inequality in position between the man whose means of subsistence are assured and can be transmitted to his family and the man whose means depend on his work and are limited by the term of his own life[1]; and inequality in education. He did not propose any radical methods for dealing with these difficulties, which he thought would diminish in time, without, however, entirely disappearing. He was too deeply imbued with the views of the Economists to be seduced by the theories of Rousseau, Mably, Babeuf, and others, into advocating communism or the abolition of private property.

Besides equality among the individuals composing a civilised society, Condorcet contemplated equality among all the peoples of the earth,—a uniform civilisation throughout the world, and the obliteration of the distinction between advanced and retrograde races. The backward peoples, he

[1] He looked forward to the mitigation of this inequality by the development of life insurance which was then coming to the front.