

ON LIVING IN A REVOLUTION

By the same Author

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DEMOCRACY MARCHES
ESSAYS OF A BIOLOGIST
THE UNIQUENESS OF MAN
ESSAYS IN POPULAR SCIENCE
WHAT DARE I THINK?
A SCIENTIST AMONG THE SOVIETS
BIRD-WATCHING AND BIRD-BEHAVIOUR
T. H. HUXLEY'S DIARY OF THE VOYAGE OF
H.M.S. ' RATTLESNAKE '
AFRICA VIEW
ANTS

ON LIVING IN A REVOLUTION

By
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PREFACE

WITH two exceptions, all the essays in this volume were written during the course of this war. I have made some minor revisions necessitated by the passage of events, and in the table of contents have appended the original date and place of publication of each article. I take this opportunity of thanking the editors and proprietors of the various journals for their kind permission to reprint. In particular my thanks are due to Messrs. Jonathan Cape Limited for permission to reprint "*Race*" in *Europe* from *We Europeans*, and to Messrs. George Routledge & Sons Limited for *Reconstruction and Peace*, which they originally published in pamphlet form under the pseudonym "Balbus." I am very conscious of the fact that many of the essays reflect the circumstances of their birth, and therefore that they either "date" or (what is perhaps the same thing in another guise) have become out-of-date in this or that particular. If, in spite of this, I have decided to republish them in book form, it was because I wished to be on the record, so to speak, in however minor a capacity, in the great debate the world has been holding with itself since September 1939.

Never, I suppose, has the process of re-thinking been so intense as in these past four years. There has been the re-thinking of old problems, the transvaluation of values; and there has been the re-direction of thought to new fields, the compulsory cross-fertilization of ideas. As a result, we now live in a quite different world. There has been a revolution of thought, both reinforcing and reinforced by the revolution of economic and social fact.

The biologist inevitably recalls those drastic changes in the history of our planet to which the same term of *revolution* is applied. At least six of these geological revolutions are known to have occurred in the thousand-million-year span of terrestrial life. They are essentially periods of mountain-building accompanied by the emergence of more land from the sea; but they alter the whole of the environment available to living things. Just as the human revolution we are now living through has changed the world's intellectual and social climate, so they alter the world's physical climate. As a result, at each revolutionary recurrence many groups of animals and plants become extinct, or are reduced to a few poor vestiges.

I have just looked up what Mr. H. G. Wells and I wrote about

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the effects of these revolutions in *The Science of Life* some fifteen years ago, and find it illuminating enough to quote. Here it is:

"Such times, as may be imagined, are critical times for the world's living inhabitants. They are times both of destruction and of progress. The specialized and the bulky and those that are pleasantly adapted only to the long epochs of smooth conditions are overtaken by disaster and extinguished or brought low. But their very destruction gives opportunity to smaller and less specialized creatures, which have been hardy or quick-witted enough to make a place for themselves in the shade of the vested interests of earlier life; and new adaptations are forced by necessity on to many survivors. So it is, that these rhythms are always followed not only by widespread extinction, but also by the rapid advance of some new and abler type of animal or plant machine."

There is here a remarkable analogy with what happens in one of the historical revolutions that affect human history. The greatest difference is one of tempo. A revolution is from one aspect a period during which the rate of evolutionary change is markedly accelerated above the normal. But for pre-human life the general tempo is so slow that the abnormal revolutionary rate of change is far below the normal rate for human evolution. A geological revolution takes perhaps ten million years for its accomplishment. The earliest known remains of the genus *Homo*, not very much on the human side of the line between ape and man, date back only about a million years; our own particular species of man is less than 100,000 years old; and civilization began less than 10,000 years ago. The tempo of human evolution during recorded history is at least 100,000 times as rapid as that of pre-human evolution.

The same sort of ratio holds for the abnormal speeds of the revolutionary processes in the two fields. This has some interesting consequences. The tempo of biological revolutions is so slow that it is out of scale with the tempo of biological reproduction and the life and death of individual plants or animals. However drastic the final effect of a geological revolution on life may be, the effect on any one generation will almost always be imperceptible. The range available to a species will contract a few miles, or the number of individuals which can support themselves in a given area in competition with their rivals will go down a per cent. or so; but only very rarely will there be any cataclysmic disaster affecting large numbers simultaneously. This is as true for the Ice Age from which we have just emerged as for previous revolutions.

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But in historical revolutions the rate of change is not too slow to be perceptible. The cultivated outposts of Roman civilization in Gaul awaited the westward drive of the barbarians with fascinated horror. The revolution of the Renaissance and Reformation which laid the foundations of capitalism and nationalism had the most obvious effects on every branch of life, from religion to trade, from intellectual enlightenment to daily conveniences and luxuries.

However, human evolution differs in yet another important particular from that of pre-human life. Whereas the average rate of biological evolution appears to remain constant, at least over periods that are very long even by geological standards, that of human evolution has up till now shown a general acceleration. Changes (such as inventions or improvements) of a magnitude which took 50,000 years to accomplish in the early Palaeolithic, were run through in a mere millennium towards its close; and with the advent of settled civilization, the unit of change soon became reduced to the century. But civilization, like all human tradition, is cumulative, and the rate has been progressively if irregularly speeded up during the five thousand years of written history. This speeding up has been particularly noticeable during the past three hundred years, owing to the impact of the new change-accelerating technique of modern science. Roughly and crudely, we may say that whereas at the beginning of this period the rate of new discovery and invention was such that the digestion of major change extended over the better part of a century, it has steadily increased until the process of digestion must now be accomplished within a decade.

This is something new in history. The better part of a century is a long human life-time, and within this span adjustment, both personal and social, is comparatively easy. When the time available for the digestion of change is reduced to a single generation, then, though individual adjustment is more of a problem, social adjustment is still not too difficult. But once the rate of major change has overtaken the rate of social reproduction, and is down to a half or a third of a generation, a new and formidable problem is introduced. The individual himself is asked to recast his ideas and his attitudes once or even twice within the space of his active working life. This applies to normal change. But during a revolutionary period the tempo is still faster, and even more basic adjustments and more rapid changes are thrust upon the world: those of us who, after beginning their careers in the golden Edwardian sunset of the Victorian day, have had to live through two world wars, know what this involves.

It is on the whole very creditable that humanity, faced with this

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new biological phenomenon of a speed of evolutionary change considerably higher than the speed at which the human generations succeed each other, has managed to adapt itself so well as it has. There has been a general, radical and on the whole intelligent change in outlook since 1939. On the other hand, to effect this change, a major war has been needed, and four precious years from time's irreplaceable store. It seems clear that new machinery is required to meet the new situation properly. From now on we need to think in terms of change. This applies to all the main aspects of life, from central planning to education. Man must become consciously evolutionary, in his individual thinking, in his collective outlook, and in his social machinery.

The modern increase both in degree and rate of change emerges clearly enough if we contrast the industrial with the present revolution. During the industrial revolution the mass of the people realized only too well that a fundamental change had come over their lot, but the process was out of their hands, and indeed seemed wholly out of any control. The more prosperous section of the nation could envisage themselves as playing a part in a great historical movement, but the movement was on the whole envisaged as a long-term one, continuing on lines of more or less inevitable "progress" without alteration of its fundamental character.

But to-day the common man is beginning to grasp and to participate in the process of change, and the leaders of thought and action are realizing that frequent large and often qualitative changes are bound to occur in the process of change itself. Aviation, radio, television, are altering and will continue to alter the scale and the character of organized human groups. Population changes are altering the balance of power more rapidly than our parents realized. The implementation in practice even of our existing knowledge concerning diet, disease, and positive health will make sweeping alterations in effective human nature, the results of which cannot be foretold: and the results of future discoveries in glandular control, sex-determination and eugenics are still more unpredictable. The techniques of large-scale over-all planning offer quite new possibilities of controlling man's physical and social environment. And for the effects of the discoveries yet to be made in the psychological domain, involving the possibility of moulding human mind and temperament almost at will, all we can say is that they are quite incalculable, but are bound themselves to be revolutionary.

The present revolution, in fact, is itself revolutionary among revolutions. For the first time the idea of the *right kind of change* has

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emerged, eventually to take precedence over this or that measure, this or that state of social organization, as the ultimate concern of policy.

Meanwhile there is a danger against which we must be on our guard. It is the danger of imagining that it is easy to see the goal of the revolution through which we are living.

Many people mistake their idealism for reality and their hopes for practical possibilities. This happened at the time of the French Revolution, with the idealistic assumptions about the inherent goodness of human nature once freed from kingly and priestly tyranny: the Religion of Reason failed to work, and the ideal of Liberty, Equality and Fraternity was largely sterilized by the brute facts of imperfect human and social development. It happened again in the Victorian enlightenment, with the idealistic assumptions about the inherent goodness of unrestricted economic competition: the religion of automatic progress also failed to work, and the ideal of self-help, individual enterprise, and universal educational improvement were largely sterilized by the brute facts of imperfect economic development. It happened again at the close of the last war, when the idealistic assumptions about self-determination and the League of Nations foundered on their own inherent contradictions.

At the present moment, equally unreal and often contradictory assumptions are in the air, about the sovereign virtues of socialism, of parliamentary democracy, of universal welfare for the Common Man, of military and social security, of political freedom, of federation. The complementary danger is that of over-simplification, the failure to realize the limitations of human prevision. This was particularly well exemplified in nineteenth-century economics, when the upholders of *laissez-faire* failed to foresee the inevitable growth of big business, monopoly capitalism, powerful labour and professional organizations, lobbies, and State interference, and Marx left out of his calculations the development of the "salarariat" and the managerial class. Similarly in the international sphere the nineteenth-century theories of the sovereign nation failed to foresee the results of imperialism, of the filling up of the world's empty spaces and economic frontiers, or the possibilities of the totalitarian State and its inevitable aggressiveness.

In particular, the over-simplifiers fail to take account of the fact that any social or economic system left to itself is apparently bound to develop new features which eventually transform its character, and internal contradictions which, if not attended to, lead to its violent disruption. Once more the remedy is to think in terms of change instead of statically or ideally. Socialism, for instance, has no blue-

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print, for it is not a particular state or fixed system, but a process. Nor is democracy to be equated with, say, parliamentary democracy. It is in the most general terms a dynamic system aimed at securing the maximum freedom and welfare and development of the maximum number of individual human beings. Here, as elsewhere, we need clear principles; but the resulting system cannot help being an evolutionary one, and its detailed working must be constantly supervised and adjusted as it develops.

Thus to-day the lesson of our revolution is plain. It is that we should attempt to introduce the time-dimension into our politics and our economics, to think in terms of direction and rate of change instead of goals or blue-prints or defined systems, however ideal.

In particular, we need the most careful analysis of the present situation, in order that we may be able to disentangle the fundamental from the accidental, the broad inevitable trends of the revolution from the areas of change which are still amenable to our guidance and control.

It is one thing to weather a gale in a sailing ship, another to make the gale take you on your course. Civilization will certainly come through this revolution, in spite of its violence; but if we are sufficiently wise and are willing to take enough trouble, we may make that very violence serve constructive instead of destructive ends. When Margaret Fuller made her pronouncement "I accept the universe," Carlyle said "Gad, she'd better!" To-day we had better accept the revolution. Woe to those who resist it—they are at best delaying the inevitable, at worst risking more violence and bloodshed, in any case uselessly increasing the frictions of the evolutionary machine and adding to the discomforts and distresses of mankind. But woe too to those who accept the revolution passively and imagine that its blind forces will do all the work for them. Their last state shall be worse than their first.

To live in a revolution is a dubious privilege, and to live in this particular revolution is in some respects particularly unpleasant. But it has one compensation. This revolution is the first in which scientific knowledge and conscious planning is able to play a part. History is being made at greater speed than ever before, and if we are willing to make the effort, we who live in this revolution have the privilege of helping history.