REVIEWS

MAN, MIND OR MATTER. By Charles Mayer. Translated by H. A. Larrabee. Boston: The Beacon Press, 1951.

It was generally believed that with the dawn and progress of twentieth century science, the cry of materialism had entirely subsided, particularly after the publication of Lecomte du Noüy's great work *Human Destiny*. But Charles Mayer, a contemporary scientist of considerable repute in the fields of Physics and Biochemistry, has raised the ghost of materialism again, albeit in a new form.

Larrabee, his translator, announces in his Preface to this volume that this is a " sanely optimistic survey of man's place in the universe " (vii) and describes the author as " in the great line of succession of bringers of light from France " (xiii). The author himself promises " to set forth a renovated and rejuvenated philosophy of rational materialism " (xv). The world is familiar with two types of modern materialism—the mechanistic, deterministic and pessimistic materialism of the nineteenth century and the totalitarian, dialectic materialism of Marx. Mayer rejects both of them and urges a return to the individualistic, optimistic, ethical materialism of Epicurus. In scientific method, he holds, rationalism and materialism merge. He examines the scientific knowledge up to date and deduces a materialism that recognises the factor of 'progress' and does not reject ethics; he has christened this as 'progressionistic materialism'. In the present volume he seeks to state its case and first principles.

The work, as the author notes, comprises of three parts: " (*a*) our knowledge of the physical world; (*b*) our knowledge of the living things; and (*c*) the possibility of substituting an ethics derived from the idea of progress and capable of satisfying the highest aspirations of man ". He recognises the fact of evolution in Nature and accepts that living things are only evolved from the non-living. He lays down as postulates: (*a*) that the universe is moved by purely physical laws; (*b*) that life results from natural causes; and (*c*) that mind is only a manifestation of material phenomena (4). He denies the supernatural or transcendental truths: " the universe finds in itself its own explanation and there is nowhere else to look for one " (20). Nature " like our workman, is only itself a machine, an automaton " (28). Life is matter but for one big difference that the latter " knows nothing of the joy of living, the desire to live, the fierce will to continue to live " (46). Evolution results from the will-to-live (36), the

" tireless determination of everything living to prolong its life one way or another ". " The well-being which comes from the feeling of being alive.... is the moving principle which activates and directs all living organisms " (56). And he declares that " the hypothesis of progressive evolution of living beings is irrefutably affirmed...." (74). Nature evidences progress; " those which do not progress are destined to vegetate and then to disappear " (139). He assures us that his materialism does not destroy ethics (100) as did earlier materialism or contemporary Soviet materialism. But he objects to ' theoretical ethics inspired by introspection and deduced from *a priori* principles ' (95). He starts his work analysing the nature of ethics and points out that in ethics " there is no necessary connection between principles and practices " (xvii). He does not deny the idea of moral obligation, which he describes as a universal human need (102). But he is interested in it only in so far as it is useful, for man, according to him, is guided essentially by self-love. This utilitarian ethics is not confined to man; its essential elements are in all living beings (95). Whatever has this utilitarian value gives to the living thing a feeling of satisfaction, which in turn accords a favourable ethical sanction (110): this is intimately related with the idea of progress, " considered as the supreme aim of humanity " (150). Thus Mayer declares that his " progressionistic materialism " as a kind of humanism, a " conception of life which may be capable of satisfying our highest and deepest needs " (154).

This is an effort on the part of a scientist to construct a philosophy of life on the basis of his experience and knowledge of the world. But one who reads this volume will at once note that he has no special calling for this task. Whatever his merits as a scientist, Dr. Mayer is thoroughly incompetent and ill-equipped to philosophise. And this entire work is little better than a string of declarations, with no attempt to explain their implications or demonstrate their validity. It is, therefore, difficult to assess the merits of the case he makes out: the appendix on " the first principles " is more in the nature of an election manifesto than of a philosophical doctrine. He has exhibited a greatly confused manner of thinking, an unusual thing in a scientist; and one fails to make out what exactly he is driving at. And the mystery is hightened in view of the fact that in the ultimate analysis, he does not seem to improve in any way on Epicurean materialism; his ' novel ' hypothesis seems to fade away into the oblivion of historical castaways. One wonders why he should have attempted a chapter on " Human and animal souls ?" (88-91), which only provokes great fun for a student of philosophy. His knowledge on the activity of brain (84) seems to be deplorably scanty. He harps incessantly on the idea

of ' progress ' almost *ad nauseum*, but he has nowhere defined or explained the term intelligibly. He evinces a habit of making statements offhandedly: *e.g.*, " without irritability, there is no memory; and without memory, there is no consciousness " (95) (one would wish he had added a word as to what this impressive statement signifies); or " In the course of the study of human customs it is easy to draw up a kind of statistical table of the motives from which they spring " (xviii). (We very much wish he had done this easy task for our benefit!) He contends that conscience " is possessed not only by man but also by higher animals " (85–86), but his analysis of conscience does scant justice to any decent man's notion of it: " it derives all its force from our confusion and shame as we think what would happen if other people should come to know our most secret feelings and weakness !" (85). He speaks of ' moral sanction ' without letting us know what to mean by that term. We do not expect a scientist, and a materialist at that, to base a dogma on such vague and obscure expressions such as ' enlightened self-interest ' and ' moderate pleasures ' (131), ' scale of values ' of each living being (107), ' progressive evolution ' (74) and so on. One is tempted to laugh at this statement: " There exists in everything that lives a subconscious which acts unwittingly " (52), coming as it is from an uncompromising materialist.

There is, however, an important doctrine that has been mooted by the author: that is, pleasure as the basis for progressive materialism. " It (Nature) goes ahead, pushed from behind by irresistible forces.... they come from the very nature of things "; " Nature or more exactly living matter, has no other purpose than to continue to live because it finds great joy in living " (28–29). Pleasure is defined by him as a " product of purely material sensations " (56) but is used by him in a poetical or mystical sense. Nature's sole purpose to live, he says; and adds that life is invariably accompanied by sensations of well-being or suffering (29). Should we not *ipso facto* posit the existence of a psychological subject to which the sensation of well-being belongs? It can certainly not be a mere process without an agent, as " it is the moving principle which activates and directs all living organisms " (56). Further, he speaks of a natural ethics based on instinct, survival and pleasure. It would indeed have been highly instructive had the author explained his position more clearly. Likewise, one fails to make out what Mayer means by experience when he says, " Nature suggests the idea of choice based upon experience rather than resulting from advance knowledge of the future " (81); or " It is experience, and not reason, that has taught us the value of life " (55). This trend of thinking, however, in no way forces the author's conclusion that utlimate

purpose is ruled out of nature. Indeed the author remarks: "Nature is neither blindly deterministic, nor deliberately purposive. It is simply opportunist" (39). This statement rings a note of enigma. And does not this notion of opportunism jeopardise the concept of order in nature, which the author, as a scientist, is obliged to subscribe to?

In brief, the efforts of Dr. Mayer to found a new variety of materialism are both disappointing and deplorable. One is almost tempted to say—unnecessary and absurd. While he has not made any original contribution to the general theory of materialism, which the world is acquainted with all along, the author, in his anxiety to accommodate to the general spirit of the thinking folk of the present day, has only succeeded in giving expression to his own hazy thoughts about the philosophy of materialism as well as the modern spirit. Of course, one can hardly mistake the nobility of his motives: "The best answer to pessimism and discouragement is life envisaged as an experiment and adventure" (146). But this is only Epicurus retold. Indeed one feels that the author could well have saved the trouble in writing this book had he only understood his own words when he wrote: "And let us persuade ourselves thoroughly that the value of man has significance only by virtue of the end which he sets himself" (101).

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PRINCIPLES OF EXTRACTION AND REFINING OF METALS: Published by the Institution of Metallurgists, London. Pp. 102. Price 6 *sh.* 6 *d.* for members and 12 *sh.* 6 *d.* for non-members.

This publication comprises a series of five lectures delivered by eminent British metallurgists at Ashborne Hill in 1950 under the auspices of the Institution of Metallurgists as part of the Institution's programme of Refresher Courses. The 1950 Course is the fourth of the series.

The first lecture on 'Physical Chemistry and its Use in Extraction Operations' by Welch explains with remarkable lucidity the fundamentals of thermodynamics and their importance in the study of chemical metallurgy. Emphasis is on the use of thermo-dynamic data in predicting the feasibility or otherwise of metallurgical reactions.

The second lecture on 'The Place of Mineral Dressing in Extraction Metallurgy' by Pryor lays stress on the importance of beneficiation methods as pre-treatment steps in the extraction of metals from ores. The economic and technical aspects are briefly discussed and typical flow-sheets are included.

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The fourth lecture by Northcott on 'Fundamentals of the Production of Metal and Alloy Ingots' discusses the problem of dissolved gases in liquid metals and alloys and their removal. The variables in moulding and casting techniques are briefly but clearly explained.

The fifth lecture by Richardson on 'Principles Underlying Refining Processes' highlights the kinetics of refining reactions and the thermodynamics of metallic and slag solutions.

The course of lectures will be found extremely useful by the students of metallurgy as they provide an excellent resumé of the modern trends in these fields.

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