

Perhaps the author's most important contribution is his discussion of wide contrasts in population density within the tropical Far East. Although rice cultivation is characteristic of the densely settled areas and alone makes possible the highest densities of all, skill in rice-farming and in irrigation varies greatly according to tradition and experience. The areas relatively empty are characterized by 'shifting' agriculture which, though not necessarily wasteful as has so long been assumed, demands an extensive use of land widely at variance with the experience of those rice-growing peasants of the most congested of the islands who show the greatest economy in the use of soil. The impact of one type of farming economy upon another is inevitably disturbing to the more primitive; and protection of the interests of the 'shifting' agriculturist necessarily concerns a paternal government. There is criticism of too-niggardly apportionment of farm-land to Javanese settlers in the Outer Islands, and a warning is offered lest the overcrowding of Java should be repeated in Sumatra and elsewhere.

The volume is superbly produced and generously equipped with maps and bibliographical references.

WALTER FITZGERALD

TRADITION OR FREEDOM?

A Century for Freedom

A Survey of the French 'Philosophers'. By Dr. Kenneth Urwin. (Thinker's Library, No. 109.) Pp. vi + 116. (London: Watts and Co., Ltd., 1946.) 2s. net.

THE aim of the author in presenting this sketch of eighteenth-century thinkers is "to show how much our freedom of thought derives from their determined onslaught on the restrictions imposed upon human reason by the religious system inaugurated and controlled by orthodox Christianity". The theme centres around the attacks on religion by well-known French writers; for the purpose of the book "we may take as their enemy any form of sectarian Christianity". Whenever the word *philosopher* denotes "the French sense of rationalist, social-minded propagandist", it is printed in italics.

Dr. Urwin is well qualified to make a survey of the French *philosophers*, and the inclusion of extracts from the writings of Voltaire, Diderot, d'Alembert, Rousseau, Montesquieu, d'Holbach and others, indicates the scope of his work. The book opens with a brief account of thought in France prior to the eighteenth century, and the first chapter closes with a statement of traditional views concerning man and the universe, with which the *philosophers* had to contend. The "awakening of reason" is traced from the Jesuit-Jansen controversy, and reference made to the English influences of Bacon, Newton, Locke and Hobbes.

The reaction against tradition and authority was expressed in the scientific outlook of Buffon, who taught that we misuse philosophy when our first aim is to find the 'why' of things; our immediate object should be "to find out the *how* of things, the way in which nature acts. . . . That is why we must collect with care the examples which oppose our pretensions; why we must insist upon those facts capable of destroying a general prejudice which we receive from taste, an error which we adopt from choice. . . ."

A chapter is devoted to "Fact and Theory": in the words of Diderot, "That which has never been called in question has not been demonstrated"; or of Voltaire, "I am not free to believe when I have no evidence".

The influence of the sensationalism of Locke is evident in the treatment of morality by the *philosophers*. They accepted as basic that if all our ideas come to us through our senses, it follows that moral ideas also have their source in human experience. Another chapter deals with the unique claim of Christianity. Voltaire is quoted as summarizing the eighteenth century point of view on tolerance: "It is obvious that any individual who persecutes his brother man, because he does not share his opinions, is a monster". Deism and materialism are successively reviewed, and in the last chapter, on "Religion and Politics", attention is directed to the undesirable control of State by Church. For example, after the Revocation of the Edict of Nantes in 1685, with the consequent persecution of Protestants, a grateful Church granted Louis XIV four times as much money as it usually did. In conclusion, Dr. Urwin summarizes the main work done by the *philosophers*: "Briefly it may be described as giving to man the means of developing himself in his own way, subject only to the duties required of a good citizen".

The value of the book lies in its record of the contribution made by French writers toward that freedom of expression and honesty of thought which are such essential parts of scientific method. A feature which will especially appeal to the general reader is the explanation, as they occur, of such philosophical terms as sensationalism, dualism, etc. There is no index, but useful biographical notes on some of the *philosophers* are inserted at the end of the book.

H. D. ANTHONY

A GREAT INDUSTRIAL SCIENTIST

Willis Rodney Whitney, Pioneer of Industrial Research

By John T. Broderick. Pp. 324+7 plates. (Albany, N.Y.: Fort Orange Press, Inc., 1945.) n.p.

IN a foreword to this volume, Dr. Karl T. Compton writes: "Few scientists have so impressed their ideals upon their contemporaries and followers as has Willis R. Whitney. He has largely set the pattern and philosophy of the modern industrial research laboratories, one of the unique achievements of this century. He was the right man in the right place at the right time."

In 1900, Whitney, who had graduated at the Massachusetts Institute of Technology and the University of Leipzig, was offered by E. W. Rice, then vice-president and technical director of the General Electric Company, U.S.A., a new kind of job for which there was little precedent—that he should undertake the formation of a research laboratory for investigations in the electrical field. A number of American industries already maintained laboratories, but their activities were associated with development or 'trouble shooting', but Rice had something different in mind. He and his associates, including Elihu Thomson, Steinmetz and others, realized that the electrical industry was based on the fundamental researches of Faraday, and that if it was to continue its development and rapid